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Guide



EXERCISES

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1. DEVELOPMENT AND CONDUCT OF EXERCISES

1.1 Introduction

Emergency management exercises are evaluated demonstrations of the integrated capabilities of emergency response resources (personnel, procedures, facilities, and equipment) conducted for the purpose of validating elements of an emergency management program. Exercises should be realistic simulations of emergencies to include command, control, and communication functions and event-scene activities. They may vary significantly in size and complexity to achieve their respective purposes.

Exercise-specific objectives are used to establish the exercise scope, specify the emergency response functions to be demonstrated, identify the extent of organization/personnel participation, and identify the breadth and depth of exercise activities to be accomplished or simulated. Typically, not all emergency management program elements are demonstrated in each exercise and a systematic approach should be used, with emphasis on participation and coordination among the emergency response organizations, to demonstrate aggregate response capabilities over a period of years (e.g., four to six).

The guidance in this chapter is applicable to all exercises throughout the DOE complex - at the facility, site, operations/field office, and Headquarters Element levels for DOE Federal and contractor organizations, including the Radiological Emergency Response Assets and Transportation Emergency Preparedness Program. The guidance adheres to the DOE “commensurate with hazards” approach to emergency management. Guidance is provided for facilities/activities with varying types and levels of hazards and with differing organization structure/complexity. The “functional” aspects of exercises are addressed (i.e., what, when, and how), but not the roles and responsibilities of specific organizations or individuals (i.e., the who).

The consolidation of DOE 5500-series Orders into DOE O 151.1 resulted in minimal change to exercise requirements for facilities/activities subject to the Operational Emergency Hazardous Materials Program. Requirements pertaining to exercise periodicity and extent of offsite organization participation were clarified. The Operational Emergency Base Program introduced in DOE O 151.1 establishes a minimum level of emergency management for facilities/activities without significant quantities of hazardous materials.

Drills are clarified to be “hands-on” training evolutions. Guidance related to drills is addressed in Volume V, Chapter 4. External (non-DOE) emergency management requirements may use the terminology drills rather than the term exercise. Readers are

cautioned that external requirements and interpretations for drills may overlap DOE's current definition and requirements for exercises. Such overlap may be a source of confusion and/or misinterpretation of external requirements.

This chapter discusses the development and implementation of an exercise program, including program planning, management, and documentation. It provides guidance on the design and development of an exercise; including scheduling, work planning, and determining objectives; and the production of an exercise package. Conduct and evaluation of exercises are also described; examples of a scenario package are provided in the appendices.

Base Program. The Order states that, at a minimum, each Base Program site/facility is to conduct building evacuation exercises consistent with Federal regulations, local ordinances, or National Fire Protection Association Standards. Exercises are to be conducted as often as needed to ensure that employees are able to safely evacuate their work area. The organizations responsible for communications with DOE Headquarters, Operations/Field Offices, and offsite agencies, are to test communications systems at least annually or as often as needed to ensure that communications systems are operational.

The minimum requirements for site and facility exercises associated with Operational Emergency Base Programs are limited to activities such as building evacuations and communications systems testing. Exercises in this context are correspondingly much more limited in scope than exercises related to hazardous materials. Therefore, this chapter on exercises would exceed the scope of any exercises at a minimal Base Program site/facility. For a more extensive Base Program, this chapter would be applicable for developing and conducting exercises. As with all emergency response exercises, a systematic approach should be applied for exercises associated with the Base Program, using the principles and general approach applicable to hazardous materials exercises.

1.2 Exercise Program

An exercise program should validate the elements of the organization's Emergency Management Program over a multi-year period. The program should provide a continuing series of periodic exercises to evaluate emergency response capabilities and ensure that members of the Emergency Response Organization (ERO) are prepared to respond appropriately to an actual emergency.

Specifically, an exercise program should provide the following.

- Management and administration of the exercise planning process.
- Conduct and evaluation of exercises.

- An evaluation process to ensure that corrective actions are identified and implemented.

1.2.1 Participation and Frequency

Facility Level. Each facility with quantities of hazardous materials exceeding threshold quantities, threshold planning quantities, and/or quantities of radionuclides should participate in an exercise annually. The exercise may involve a single facility, or if several facilities are in reasonably close proximity, the exercise may include those facilities. Each facility should participate in an exercise annually, but not necessarily host it. Exercise participation should include evaluation and critique at the facility level.

Facility exercises should be periodically subject to “external” Departmental evaluation; that is, evaluation by a DOE organization outside the immediate facility organization. Departmental elements with oversight responsibilities (both operations/field offices and Headquarters elements) should coordinate external evaluations so that they are conducted at least every 3 years.

Site Level. Consistent with the facility-level requirement, site-level response personnel and resources should participate in a minimum of one exercise annually. For sites with multiple facilities, exercises should periodically include joint participation by facility-level and site-level emergency response personnel and resources to demonstrate their integration. Site-level participation should be rotated among the facilities so that every facility participates with site-level personnel and resources once every several (e.g., 3) years. (Site-level participation may include a single facility or several facilities for a specific annual exercise.) For sites with a single facility, it is assumed that facility-level and site-level response personnel and resources are inherently integrated and participate annually in the facility exercise.

Each Departmental Field Element (e.g., Site Office, Area Office, Field Office, Operations Office) should participate in a minimum of one exercise annually. The exercise should include joint participation by facility-level, site-level, and Field Element-level emergency response personnel and resources. For Field Elements with multiple-site responsibilities, Field Element participation is rotated among the sites so that each site participates with the Field Element every several (e.g., 3) years.

Pursuant to its functions and responsibilities, the Office of Emergency Management periodically evaluates site-level exercises. If an evaluated exercise is determined to be of sufficient overall quality, as decided by the Office of Emergency Management *in agreement with the respective Operations/Field Office*, the requirement for a site-level exercise in the following year may be waived. The waiver will be announced in the evaluation report.

Radiological Emergency Response Assets. The Department's radiological emergency response assets (i.e., Accident Response Group (ARG), Nuclear Emergency Search Team (NEST), Federal Radiological Monitoring and Assessment Center (FRMAC), Aerial Measurement System (AMS), Atmospheric Release Advisory Capability (ARAC), Radiological Emergency Assistance Capability /Training Site (REAC/TS), and Radiological Assistance Program (RAP) should be included as response participants in an exercise at least every 3 years. The exercises should provide for a realistic application of the assets and include the majority of the resources associated with the assets. The assets are generally involved in exercises where the “lead” for exercise planning rests with another organization. The exercises are often an interagency exercise or may be in concert with a DOE facility/site. Exercise participation by the assets is the responsibility of the cognizant programmatic offices at Headquarters or the field. For RAP, the resources under the cognizance of each Operations/Field Office should participate in an exercise every 3 years.

Offsite Organizations. Federal, tribal, state, local, and private organizations that support the site/facility's response capability and/or may be affected by a facility emergency should be invited to participate in exercises at least every 3 years.

1.2.2 Program Management

Operations/field offices and contractors at the site/facility level should establish and maintain an “exercise program” closely coupled with training and drills. Each operations/field office and contractor should manage the exercise program within the Emergency Management Program. They should recognize that the management of exercises requires extensive planning, coordination, and interaction both internal and external to the organization.

A successfully managed exercise program should address the following.

- Overall planning, preparation, conduct, control, and evaluation of exercises and the implementation of applicable corrective actions and improvements.
- Planning and scheduling long-range activities for future exercises, the current year's exercise, and incorporation of lessons learned from previous exercises.
- Development of comprehensive exercise objectives based upon legislative, regulatory, and Order requirements; organization-specific hazards assessments; emergency plans, procedures, and agreement/understanding documents; and lessons learned from past exercises and actual events.

- Development of exercises commensurate with, and based upon, the site/facility hazards and types of scenarios identified in the hazards assessments.
- Application of sufficient resources to the exercise program.
- Assignment of roles and responsibilities for all aspects of the exercise development, conduct, and evaluation process.
- Implementation of corrective actions and improvements.

The use of an “exercise objective matrix” is recommended as a tool to facilitate administration of the exercise program. The matrix should identify all programmatic exercise objectives and correlate with facility/site-specific hazards and the specific objectives to be demonstrated in individual exercises. The matrix should support/document validation of Emergency Management Program elements over a multi-year period. An example exercise objective matrix is provided in Table 1.1.

For large organizations and/or sites/facilities with complex hazards, compilation of exercise objectives into a data base may be useful. Such a data base should include all objectives required to be demonstrated on a periodic basis. Each exercise will not call for demonstration of every objective contained in the data base. The objectives for a particular exercise should be a subset taken from this data base, supplemented, if required, with additional objectives unique to the exercise. The data base format facilitates assurance that objectives are accomplished within the required period.

Table 1.1. Exercise Objective Matrix.

Objective	Year 1	Year 2	Year 3	Year 4	Year 5
Activation of the ERO	X	X	X	X	X
Coordinate and communicate information/data with offsite organizations and agencies	X		X		X
Complete required initial notifications	X	X	X	X	X
Complete an initial consequence assessment	X	X	X	X	X

Objective	Year 1	Year 2	Year 3	Year 4	Year 5
State requirement #1		X		X	
State requirement #2	X		X		X
Local requirement #1	X	X	X	X	X
Local hospital requirement #1			X		

1.2.3 Exercise Program Plan

The exercise program should be documented in an exercise program plan. The formality of the plan should correlate with the scope and complexity of the organization's exercise program and should be commensurate with program plans for similar-scope activities (e.g., emergency training). The plan should describe the organization's exercise planning process, preparations, conduct, control, evaluation, critique, follow-up reporting, and corrective action implementation. The exercise program plan should include identification of resources; roles and responsibilities of cognizant personnel; identification of the comprehensive exercise objectives (objectives matrix if applicable); long-range and short-term planning activities and milestones; and exercise schedules.

The program plan should include a long- and short-range component.

- A **long-range** plan (e.g., 5-year plan) should be prepared and maintained as part of the Emergency Readiness Assurance Plan (ERAP.) The long-range plan should be developed in concert with the various organizations affected by its provisions. The long-range plan should include the general schedule, scope, and objectives of the exercise over the multi-year period. It should provide for demonstrating all aspects of the emergency program in a logical manner.
- A **short-range** plan should address fiscal-year planning. It should include the scope, exercise objectives, participants, and schedule for the major tasks and activities associated with the current year's exercise(s). Planning and scheduling for a specific exercise includes confirming or modifying the planned scope, developing detailed objectives, committing the participants and resources, and identifying and scheduling the various activities.

1.2.4 Exercise Program Organization

Each organization should identify a single individual who is responsible for the exercise program. Depending on the organization's size and the scope/complexity of the exercise program, these responsibilities may be the primary or the collateral duties of the individual. Responsibilities include the authority or capability to commit and coordinate the resources necessary for an effective exercise program.

Depending on the program's scope/complexity, the exercise program functions may be performed by the designated individual or by a planning group. The functions should include the following.

- Resolving conflicts identified during the exercise scheduling process.
- Concurring on the scope of each exercise.
- Committing organizational resources for development, conduct, response, and critique of an exercise.
- Monitoring potential programmatic impacts from the exercise development process as well as resolving any specific exercise development difficulties or conflicts.
- Coordination with the training and drill program to ensure that all participants have completed their required *fundamental* emergency management training (not specific to an exercise) prior to a scheduled exercise.

1.3 Exercise Design and Development

1.3.1 Planning and Scheduling

Planning and scheduling an exercise requires the involvement and cooperation of all participating organizations. A well-planned, -executed, and -documented exercise requires the coordination and cooperation of senior management, EROs, and when applicable, offsite response organizations. Coordination with offsite authorities during the planning phase depends on the extent of their participation in the exercise. Their participation may range from the limited staffing of a control cell for the purpose of receiving notifications to the complete staffing and activation of all applicable response facilities and assets. Planning the exercise should allow adequate time for the effective preparation and review of the exercise package. The generic schedule in Table 1.2 is recommended.

Table 1.2. Exercise Planning Schedule.

Days Prior to Exercise	Planning Activity
365	Establish or confirm exercise date. Establish exercise scope.
270	Establish planning organization. Confirm scope and level of participation by all organizations. Develop initial exercise objectives.
180	Verify plans and procedures to be used. Begin scenario development.
150	Finalize exercise objectives
90	Submit exercise scope and objectives to NN-60. Identify controller and evaluator requirements. Complete draft exercise package.
60	Complete planning group review/revision of draft exercise package. Submit exercise package to operations/field office and Program Office for concurrence. NN-60 decision and notification of their intent to evaluate the exercise.
45	Submit exercise package to NN-60 if the exercise is to be evaluated by NN-60.
15	Finalize exercise package. Complete generic controller/evaluator training.
1-5	Conduct exercise-specific controller/evaluator training. Conduct responder and observer briefings.
1-2	Finalize exercise preparations.
Post Exercise	Conduct critiques.
Post Exercise 15	Complete draft exercise evaluation report.
Post Exercise 30	Finalize exercise evaluation report. Initiate corrective and improvement actions.

Planning for exercises must be held in strict confidence to avoid compromise of the exercise materials. Scenario information should be strictly limited to those preparing, controlling, and evaluating the event. All of the exercise packages should be numbered, assigned, and held in strict confidence while under review to ensure accountability during the development and review period. Protection of data and scenario information prior to and during the event is vital to avoid compromise of the scenario. Occasionally, an exercise objective will require that a date and/or time be kept confidential. This information should be protected using the same standards as the exercise scenario.

1.3.2 Exercise Objectives

The success of emergency exercises is largely dependent on the quality of the stated objectives. They provide a basis for developing a meaningful and challenging scenario, as well as a gauge to measure exercise performance. Considerations in developing exercise objectives should include the following.

- Exercise objectives need to be fully and carefully developed for all organizations prior to the start of scenario development.
- Each exercise objective should clearly state what is to be demonstrated by the responders. Examples of generic exercise objectives are provided in Chapter 2. The following factors should be considered.
 - Is the objective clearly stated? The objective should be specific, focus on the performance to be demonstrated, and be interpreted in the same manner by all participants.
 - Is the objective measurable? The performance addressed by the objective should have observable and measurable indicators; specific evaluation criteria should be developed by which to measure performance.
- The primary source of exercise objectives is the participating organization's emergency plans and procedures. Other sources may include job-task analyses or performance-based indicators used to develop the organizational response structure, requirements, or training.

1.3.3 Planning Functions

For each exercise, the following should be accomplished.

- Planning and scheduling.

- Scope - The who, what, where, how, and why of the exercise.
 - Objectives - Specific, measurable performance indicators.
 - Participants - Who will plan the exercise and who will respond, control, and evaluate.
 - Safety - Guidance for all participants.
 - Security - Instructions on facility access, use of firearms, and classification issues.
 - Scenario - Mechanisms to ensure that objectives can be met.
 - Budget - What the exercise will cost to plan, conduct, and evaluate, and the financial obligations of participating organizations.
 - Logistical Support - Specific responsibilities for support activities.
 - Administrative Activities - Procurement, documentation, and reproduction responsibilities.
- Oversight of the exercise development process.
 - Exercise control.
 - Exercise evaluation and critique.
 - Exercise evaluation report
 - Implementation of corrective actions

1.3.4 Responsibilities and Organization

Exercise planners are responsible for overall exercise planning, including preparation, conduct, control, evaluation, critique, report, and follow-up actions.

Exercises may require either a small group of planners or a large, formalized planning structure. A single individual should be responsible for the overall design, development, control, and evaluation of the exercise. This person should be a senior-level individual, knowledgeable of the exercise process, with experience in scenario development and exercise control. This person may serve as the exercise director during the exercise.

Exercise planning should involve representatives of each participating organization. For small scope exercises, one planner may represent several organizations. Planners may be formed into working groups. Depending on the scope and objectives of the exercise, there may be one working group made up of a representative from each organization participating in the exercise, or there may be several working groups, with each group having a particular function. Working group considerations are as follows.

- Working groups should be formed far enough in advance of the exercise to ensure adequate time for effective planning, preparation, and review of the exercise package.
- Group members may work independently or meet in subgroups to develop their respective parts of the scenario.
- Certain exercise objectives may require detailed technical or specialty areas of expertise for the development of scenarios, injects, and data. In these situations, a special working group can be formed. Typically, this expertise is in specific areas or disciplines such as reactor or process operations, health physics, medical, chemistry, safety engineering, or plume modeling.
- Members assigned to these groups should be familiar with emergency plans and procedures in their areas of technical expertise and be experienced in exercise development.
- Coordination with the emergency training program manager should occur in the exercise planning stage. This allows sufficient time before an exercise is conducted to satisfy any new management training or qualification requirements (not specific to an exercise).

1.4 Exercise Package

1.4.1 Development

Development of an exercise package is an iterative process involving several steps as follows.

- Development of general guidelines by the exercise planning group. These guidelines should address issues of exercise scope and duration, participants, objectives, administrative and logistical considerations, and operational or technical constraints.
- Development of a scenario timeline. The timeline should be a listing of the sequence and timing of key operational, technical, and logistical events comprising the scenario.

- Subsequent steps to refine the timeline, develop detailed scenario information; prepare message injects (instructions to controllers) and data; and prepare control, evaluation, and supporting documentation.
- Final review of the package for overall completeness and accuracy, and to ensure that the responders are provided the opportunity to meet the exercise objectives.

A unique scenario should be developed for each exercise to prevent responder anticipation of events and to ensure a valid test of the responders. The approved exercise package provides the cumulative documentation to conduct and evaluate the exercise.

1.4.2 Contents

This section identifies the contents of the exercise package. Samples of each component are provided in Appendixes A through E. The exercise package contains all the documentation necessary to control and evaluate the exercise; however, the extent and detail of information will vary with the scope and complexity of the particular exercise.

The format can be tailored by individual organizations but should include all the information outlined below.

Scope. The scope identifies all participating organizations, the extent of participation, and the purpose of the exercise.

Specific Objectives. Each exercise objective should clearly state what is to be demonstrated. Objectives should be attainable and measurable. Evaluation criteria should be developed to define how objectives will be measured by exercise evaluators. An example of generic exercise objectives is provided in Chapter 2 of this Volume.

Scenario Narrative. The scenario narrative is a “storybook” summary of the background, initial conditions, initiating events, and expected responder actions. It contains descriptions of the simulated emergency situation, including the overall sequence of events, details, supporting data, and timing of activities.

Design and Development Guidelines. This section describes any limitations placed on the design and development of the exercise, the exercise protocol, and a list of pre-approved simulations.

- **Limitations** are management policies and guidelines of concern to the exercise developers and scenario designers. They include issues such as conducting exercises on weekends, overtime restrictions or authorizations, and financial constraints.

- **Protocols** (ground rules or rules of conduct) remind responders of drillsmanship and safety issues.
- **Pre-approved simulations** list the major simulations applicable to the exercise. Examples include pre-determined meteorological data, response vehicle red lights, how road blocks will be simulated without interfering or disrupting public traffic patterns, use of water to simulate a chemical liquid hazardous materials spill, use of a smoke generator to simulate fire/smoke, use of protective equipment, simulated operation of systems/equipment, and photographs to simulate equipment damage.

Safety Planning. The safety of personnel and the facility is paramount during exercises. The planning process and the management of exercises must ensure that sufficient precautions and limitations are established and followed for the safe conduct of the exercise. A person with the sole responsibility for ensuring safety during the exercise, such as an exercise safety director, should be appointed to the exercise planning group.

During an exercise, all participants must comply with established safety rules and practices. Participants must understand that safety of exercise participants, non-participants, the public, and the environment is of the highest priority. An exercise safety plan is an effective method of documenting safety concerns and solutions. The plan should address generic and specific safety concerns, mitigative solutions, and required actions/notifications if a safety concern or emergency occurs during an exercise. Major elements of a generic exercise safety plan are listed in Appendix B.

Security Planning. Adherence to security requirements throughout all phases of an exercise by all participants is a necessity. Planning and management of exercises should include provisions for participation of appropriate security personnel.

Persons involved in exercise planning must be sensitive to information or activities that may have security implications. An exercise security plan is an effective method of documenting security concerns and solutions. The plan should address generic and specific security concerns, mitigative solutions, and required actions/notifications if a security problem or emergency occurs during the exercise. Major elements of a generic exercise security plan are listed in Appendix C.

The plan should establish parameters for exercise design, development, and conduct in view of identified security issues. Controllers are responsible for conducting the exercise within security limitations; however, all participants must comply with security requirements. Special provisions should be made for visitors and observers since they may not be familiar with DOE or site security requirements.

Public Information Education Planning. Scheduled exercises should be coordinated with the media and announced to the public. Interface with the public and offsite state, tribal, and local authorities requires management awareness and sensitivity.

The public typically has no involvement or participation in an exercise. All exercises at a facility that have the potential to affect the offsite population, either directly or indirectly, should include adequate provisions to prevent public concern, rumor, or inconvenience. The planning process and the management of exercises should provide for the development of a public information/education plan to coordinate activities with appropriate offsite state, tribal, and local authorities, the media, and the public. This plan should be developed early in the planning process to ensure coordination with interested offsite authorities/officials. Major elements of a generic plan are listed in Appendix D.

Timeline of Key Scenario Events. The exercise timeline should include key scenario events and expected responder actions, and where possible, scenario events and expected actions should be tied to the exercise objectives.

Message Injects. Message injects include instructions to controllers to begin simulations, insert information, provide earned information, acting instructions, and contingency messages. They should be formatted/presented in such a manner as to reflect the actual data that would be observed by responders in a real event (e.g., strip charts, alarm printer output, use of accident mock-ups).

Exercise Data. Data varies greatly depending on the scope of the exercise. Exercise data may include general and facility-specific, meteorological, hazardous material, and medical information.

- **General facility information** is important when non-facility personnel participate in the exercise. This information includes a facility description; area, site, and facility maps; mission description; Emergency Management Program information; and a description of offsite interfaces.
- **Specific facility information** provides operational data at the time of the event. These data may include diagrams, schematics, and data tables that will augment the scenario.
- **Meteorological data** provide weather conditions and forecasts, both real and simulated, as required.

- **Hazardous material data** may include radiation or chemical plume plots and tables, decontamination levels, and exposure levels. The technical basis and assumptions used to develop this data should be provided.
- **Medical information** includes a description of medical conditions and moulage procedures, actor behavior instructions, and vital signs.

Exercise Control. This section provides guidance for effectively controlling an exercise.

- The control organization is usually depicted on an organizational chart showing the categories of controllers and lines of communication. The categories of controllers include the lead controller, timeline coordinator, area controllers, on-scene controllers, the control or simulation cells, and actors.
- Controllers are assigned by name into each position listed in the control organization. The controller assignments should include alternates.
- The detailed controller instructions include a schedule of events for all controllers, basic controller instructions, and the detailed requirements for each controller assignment. The detailed requirements should include the message injects that the controller is responsible for inserting in the exercise, contingency message injects and the authorization process for their use, and special equipment required for the position.
- A special type of controller instructions, called profiles, can be used for actors to define roles. Profiles are normally used for media actors in either a control cell or for interviewing in person or for control cell actors representing political figures. (Profiles are generally only used with experienced controllers.)
- The **Master Scenario Events List (MSEL)** identifies the timing and summary content of all key events, messages, or injects; contingency messages; and expected responder actions for the duration of the exercise.
- The suspension, or termination, of the exercise is managed through the control organization. Responders are instructed to contact a controller when an unsafe condition exists or when a real emergency is identified. This section details the notification of the control organization, instructions for exercise suspension and re-start, and for exercise termination.

Exercise Evaluation. This section provides the information to effectively evaluate an exercise as follows.

- The evaluator organization is usually depicted by an organizational chart and a description of the categories of evaluators and lines of communication. The categories of evaluators include the lead evaluator, lead area evaluators, and evaluators.
- Evaluators and alternates are assigned by name and listed in the evaluator organization.
- The evaluation criteria provides the standards and activity-specific criteria used to evaluate the exercise.
- Evaluator modules and/or checklists display the expected response in a time-sequenced format with which the evaluator can monitor responder progress. They are based on the exercise objectives, the evaluation criteria, and the participating organization's plans and procedures.

Administration and Logistics. Planning includes the following.

- The master schedule should address all the preparation activities, conduct of the exercise, the critique process, and the evaluation report.
- The method to identify exercise participants and, if necessary, various non-participants, should be documented in this section. Participants can be identified by vests, hats, or arm bands of various colors. Ensure that the type of participant is printed on the identification method to assist those with color-impaired vision.
- The communications plan documents radio and telephone requirements. It provides for radio frequencies, protocol, telephone numbers, and directories. Additionally, it provides information concerning controller communications, training, and systems testing. Normally the following exercise telephone (communications) directories are prepared.
 - **Control Cell Directory** provided to responders, which lists the control cell telephone numbers of controllers simulating individuals or organizations.
 - **Controller/Evaluator Directory**, which includes telephone and radio channels/frequencies used for communication within the control and evaluation organizations.
 - **Responder Directory** is provided to control cell controllers and lists the telephone numbers of responders who may need to be contacted by the control cell.

- The logistics plan specifies tasks to accomplish in support of the exercise preparation, conduct, and evaluation. This includes notification of controllers, obtaining meeting rooms and classrooms, identifying and setting up the control cell, communications requirements, meals, transportation, facility security badging/access, and acquiring/staging props (e.g., moulage dummies, smoke generators, damaged equipment, simulated material). A generic logistics plan is located in Appendix E.

Glossary of Acronyms. This glossary contains acronyms and definitions of a facility- and site-specific nature. It is used by personnel who are not familiar with the facility ERO, operations, and site organization.

1.5 Conduct and Evaluation

1.5.1 Preparation

Pre-exercise activities include participant briefings, configuring props or staging equipment, establishing controller and evaluator communications, specifying safety and security precautions, making arrangements to feed participants, and making arrangements for minimizing the impact on non-participants and ongoing operations.

Controller and Evaluator Training.

- **Generic training** should be developed and conducted for individuals participating as controllers and evaluators in an exercise. This training should include both initial training and a periodic refresher prior to each exercise. Generic information on exercise control and evaluation is provided in Chapter 3 of this Volume.
 - The initial training should be conducted by an individual experienced in the control and evaluation of exercises. It should include a classroom-type presentation and discussions of correct controller/evaluator performance in various exercise circumstances.
 - The classroom-type presentation should address all aspects of an exercise and include such topics as objectives, safety, participants, realism, simulation, free play, contingency messages, prompting, and evaluator and controller-responder interface. Discussions should provide examples of circumstances that may occur during an exercise with proper controller actions. Emphasis should be placed on the criteria for controllers to intercede in responder actions and suspend or terminate the exercise.

- **Exercise-Specific Controller and Evaluator Training.** Just prior to the exercise, all controllers and evaluators must receive a briefing on the scenario and training in the specific duties they are to perform. This training may include a presentation on the various plans and procedures that the responders are expected to use.
 - Controller briefings should cover the entire scenario and anticipated responder actions, the location and assignments of each controller (including actors), communications arrangements, administrative and logistical details, an in-depth presentation of safety and security issues, and an in-depth discussion of each controller's specific assignments. The details for controlling complex or sensitive parts of the exercise should be presented in the briefing. A tour of locations and associated equipment involved in the exercise should be performed as part of the briefing.
 - All participants (players, controllers, and evaluators) should be reminded of their responsibility to prevent unsafe acts and to stop the exercise, if necessary, to ensure an unsafe act does not occur.
 - Evaluators may participate in the controller briefings to preclude the need to prepare and conduct separate training.

Responder and Observer Briefings

- The **responder briefing** shall *not* include any information related to the scenario. Responders shall be briefed regarding the rules of conduct; scope of the exercise; safety and security precautions; approved simulations; methods for identifying various exercise participants; and any special administrative, logistical, or communications arrangements in effect during the exercise.
- All participants (players, controllers, and evaluators) should be reminded of their responsibility to prevent unsafe acts and to stop the exercise, if necessary, to ensure an unsafe act does not occur.
- The **observer briefing** should occur prior to the exercise to ensure compliance with safety and security precautions and other rules of conduct. Observers may attend the controller briefing or may be provided separate briefings.

Exercise Setup. Exercise setup includes setting up simulations, preparation of scenes and visual areas (e.g., smoke generators, simulated spills, actor moulage, etc.), performing controller communications checks, conducting responder initial conditions briefings, synchronizing clocks, initializing computer simulation data, and other scenario-specific

activities. Exercise setup should be carefully planned to ensure that all logistics necessary to conduct the exercise are checked before the exercise begins.

1.5.2 Conducting the Exercise

Participants

- **Exercise Director.** During the exercise, the exercise director is responsible for the following.
 - Safe Conduct
 - Coordination and continuity
 - Providing the opportunity to meet exercise objectives
 - Commencing, suspending and terminating the exercise
- **Controllers.** Controllers provide overall direction and control of the exercise. They are primarily responsible for ensuring the continuity of the scenario and maintaining safety and security precautions. Controllers should do the following.
 - Review appropriate emergency response plans, procedures, and checklists prior to the exercise.
 - Review the safety, security, communications, and logistical plans included in the exercise package.
 - Attend required training and briefing sessions.
 - Facilitate the conduct of the exercise by providing scenario information to responders.
 - Allow freedom of responder decisions and actions (i.e., free play) to demonstrate exercise objectives and response capabilities.
 - Inject approved contingency messages or provide instructions, as needed, to keep the exercise on track with the scenario.
 - Preclude responder decisions and control actions that may compromise the safety or security of the facility, personnel, or equipment.
 - Refrain from prompting, in any fashion, the decisions or actions of responders.

- Prevent the observers and evaluators from having any interaction with responders.
Note: If evaluators have questions relevant to responder actions or performance, the controllers should respond to the questions or allow evaluators to directly question the responders at an appropriate time.
- Be prepared to suspend exercise activities in the immediate area and to use pre-arranged protocols to terminate an exercise.
- **Evaluators.** An evaluator's only function during the exercise is to observe and document the responder actions. The formal evaluation is performed after the exercise is terminated. Evaluators should be assigned specific locations or specific exercise functions. Evaluators should do the following.
 - Review appropriate emergency response plans, procedures, and checklists prior to the exercise.
 - Review appropriate plans (e.g., safety, security, communications, and logistical plans) developed for conduct of the exercise.
 - Attend required training and briefing sessions.
 - Observe the performance of responders during the exercise and document their actions using their evaluator modules or checklists.
 - Observe the performance of the control organization in controlling and directing the exercise.
 - Refrain from interfacing with responders to prevent interrupting or prompting.
 - Evaluate responder performance and the adequacy of procedures, facilities, and equipment based on exercise-specific evaluation criteria and evaluator checklists.
 - Document errors and problem areas in the scenario or conduct of the exercise.
 - Present their evaluations and recommendations in a formal critique.
- **Observers.** Observers should not interfere with or become involved in any exercise activity, nor should they contribute information or opinions to responders in any fashion.

- **Responders.** Responders comprise the majority of participants. In addition to site DOE and contractor emergency response personnel, responders may include personnel from DOE Headquarters, Field Elements, and various other DOE elements; Federal agencies; state, tribal, local, and private organizations; and the media.
- **Non-Participants.** Non-participants are personnel outside the scope of play who will continue to perform their normal, routine duties as though the exercise is not in progress. Such routines include activities necessary for continued safe operation of the facility. Efforts should be made to minimize the impact of the exercise on the non-participants and to avoid the interface between responders and those individuals.

Conduct

- **Confidentiality.** Scenario information should be closely guarded and not discussed with potential responders. Guidelines for maintaining exercise confidentiality include the following.
 - Controllers/evaluators should be careful of what they say and to whom because they may be overheard, including radio net communications.
 - Controllers/evaluators should be careful when positioning themselves to observe an activity to ensure they do not give away information by their actions.
 - Controllers/evaluators should take care that no one can see their scenario notebooks or comments. They should never lay their scenarios, notes, or messages in a location where responders can read them.
- **Simulation and Realism.** Realism should be emphasized throughout any exercise.
 - Exercises should be managed so that they are as realistic as possible. Commensurate with the safety of personnel and the safety and security of the facility, exercises should attempt to duplicate the sense of stress inherent in a real emergency situation.
 - Exercise responders should receive scenario information only as it is earned.
 - Simulation should be kept to a minimum. During the responder briefings, responders should be briefed on which functions/ activities are simulated.
 - A control cell should be used whenever it is necessary for responders to interact with entities not participating in the exercise. It is located away from the

responders and is staffed by experienced professionals who simulate or role-play non-participating organizations. This method of simulation enables realistic interactions to occur between the exercise responders and those they would expect to interact with during the course of an actual response.

- Actors/role-players should be used to simulate personnel who would actually be encountered by responders if the scenario were real. Actors may come in face-to-face contact with the responders or may be members of a control cell.
- Responders should implement their appropriate plans, procedures, and training to respond as if the scenario information is real. Responders should rely upon the controllers or exercise simulation tools to supply scenario information.
- **Presentation of Scenario Information.** Data and evidence should be presented to the responders as it would be found, measured, or indicated, with a maximum degree of realism.
 - Information should be provided to responders only when it is earned through their observation(s), correct use of procedures, and accurate measurements.
 - Time-related parameters should be provided to the responders at the time identified on messages to ensure the progress of the scenario timeline. For authenticity, and wherever possible, data sheets, recorder charts, and instrument output information should be provided in the scenario.
 - If responders require clarification (i.e., a reasonable request) about a particular message or visual cue, the controller should provide such data/information as accurately as possible considering the simulated time and the scenario conditions. If controllers need to create additional information (e.g., the message was incomplete) or do not know the information required, they should use pre-arranged protocols (e.g., obtain area controller or lead controller permission) to formulate a response.
- **Free Play.** Free play allows responders to make decisions and take actions they consider appropriate to the scenario. Realism is enhanced and responder motivation is improved when responders are provided the latitude to make decisions and take actions that may differ from those anticipated during the scenario development.
 - The key management aspect of free play is to allow such actions to occur, but to preclude actions by responders that would do the following.

- Jeopardize personnel safety.
 - Jeopardize site/facility safety.
 - Compromise security.
 - Exceed established exercise scope or limitations.
 - Preclude exercise objectives from being demonstrated.
-
- During exercises, responders may interject innovative, unexpected response solutions or actions that can be accommodated by the scenario. In such situations, the controller(s) should allow the responders to proceed with their actions and notify the exercise lead controller that a deviation is occurring. If the responder actions compromise safety or security, or limit demonstration of stated exercise objectives, the controller should note the intended action but preclude that intended action from actually occurring. This information should be reported to the evaluator.
 - Actual equipment and procedural problems that are identified during the exercise interject a form of free play. Solutions to actual equipment or procedural problems on a real-time basis afford a valuable evaluation of the conduct of operation, training, and safety culture of the responders. Controllers should allow responders to solve such actual problems unless safety, security, or demonstration of exercise objectives may be compromised.
-
- **Prompting.** Explicit instructions should be given to all participants to avoid prompting during an exercise. Prompting occurs when responders are provided advance scenario-related information or guidance regarding appropriate response actions. Prompting may result from either unintentional or intentional action by controllers, evaluators, or observers.

Communications. All written and verbal communications among participants should be clearly identified as exercise information and all message transmissions should begin and end with the statement “THIS IS AN EXERCISE.” Because radio and cellular telephone transmissions can be monitored by offsite parties, personal information such as the names or phone numbers of individuals should never be transmitted. All communications should be in compliance with security practices.

1.5.3 Evaluating the Exercise

Evaluation and critique of the exercise provides feedback to resolve deficiencies and incorporate improvements into the Emergency Management Program.

Evaluation Process. Evaluators assess the performance of the ERO and the adequacy of equipment, facilities, and resource documents used by the responders. The assessment is made by comparing performance against predetermined and documented evaluation criteria based on requirements, site plans and procedures, and best management practices. Information is gathered and documented by the evaluators. The information from the evaluation and critique processes provides feedback for use in identifying training needs and improvements to the Emergency Management Program.

The following additional sources of information may be used to evaluate the exercise.

- Responder self-critique comments/forms.
- Exercise critique comments.
- Exercise evaluation materials completed by controllers.
- Findings contained in the post exercise reports submitted by participating agencies.

Critiques. Formal critiques are conducted after the exercise. The general purpose is to provide a forum in which the exercise can be addressed and discussed among the participants. This results in identification of “lessons learned” for improving the response to an emergency. For large-scope exercises, it may be necessary to conduct several critiques to ensure that all participants take part.

- Responder “hotwash” critiques are conducted immediately following the exercise to provide an opportunity for the responders to discuss their own perspectives on the activities and events. These critiques are typically conducted “in place” (e.g., incident command post, field teams, EOC) by the respective area lead controllers/evaluators.
- A formal verbal critique is conducted following each exercise and should include participation by all controllers and evaluators. This critique should provide the forum for discussion and correlation of individual observations, the formulation of exercise findings, determination of objectives demonstrated, and determination of overall exercise performance. Recommendations for corrective and improvement actions should be addressed. The product of this critique provides the framework for the senior management critique (plus any exit meeting) and the exercise report.
- A senior management critique should be attended by key participants, including manager-level responders, the exercise director, the lead controller(s) and the lead evaluator(s). The overall exercise performance, significant observations, findings, and preliminary corrective and improvement actions should be addressed. For exercises evaluated by an external organization(s), an “exit/closeout” meeting may be conducted.

- Critiques should do the following.
 - Be conducted in a questioning, objective manner to maximize the benefit and learning experience from each exercise.
 - Include a review of scenario events, identification of shortcomings in the scenario or exercise conduct, and analysis of expected and actual responder actions.
 - Discuss responder performance, the adequacy of procedures and other documentation, and the adequacy of facilities and equipment.
 - Provide the basis for documentation of findings to facilitate identification of corrective and improvement actions for upgrading the Emergency Management Program.

1.5.4 Follow-up Activities

Record Keeping. Auditable records should be prepared and maintained for each exercise. Long-range planning information such as exercise objectives, schedules, and the exercise report are considered auditable records. Records that may be maintained include the following.

- Training records.
- Participant rosters.
- Exercise participant packages.
- Critique minutes or summaries.
- Completed evaluator modules or checklists.
- Final report.
- Accounting summary.

The Emergency Management Exercise Program Plan should be updated to reflect objectives that were demonstrated.

Exercise Report. The exercise report documents the performance of responders against their published plans and procedures and validates the Emergency Management Program. The exercise report may contain the following.

- A narrative summary with introductory and general statements noting exercise scope, purpose, objectives, participants, and overall rating of the exercise.

- A presentation of findings correlated with the exercise objectives, including positive and negative comments regarding effectiveness of planning and preparedness.
- Recommendations for corrective actions.

Corrective and Improvement Actions. An in-depth review should be made of the findings resulting from the exercise evaluation process. For recurring problems, a root cause analysis should be performed. A plan should be developed to implement corrective and improvement actions. Management should budget, schedule, and implement the actions to upgrade the Emergency Management Program. Activities should be coordinated with affected organizations.

Corrective actions, such as procedural modifications, necessitate timely feedback to the participants. Such feedback demonstrates management attention and concern for upgrading the emergency response capability and is evidence to the participants that their involvement in exercises is supported by management.

1.6 Bibliography

DOE O 151.1. *Comprehensive Emergency Management System*. September 25, 1995.

Title 41 CFR 101-20.105. *Accident and Fire Prevention*.

APPENDIX A

SAMPLES OF EXERCISE PACKAGE COMPONENTS

EXERCISE SCOPE (SAMPLE 1)

Volunteer Response '95 was developed to test the DOE ORO, K-25 Plant, State of Tennessee, and local government response to a simulated hazardous material event at the K-25 Plant. The exercise was designed to meet the following requirements and functions:

- Test concepts and functions published in the draft The State of Tennessee Multi-Jurisdictional Emergency Response Plan for the United States Department of Energy Oak Ridge K-25 Site; and
- Demonstrate corrective actions to past K-25 Site evaluations.

The following organizations are expected to participate in Volunteer Response '95 on September 13, 1995:

DOE-Headquarters

HQ-Emergency Operations Center (EOC) staff (simulated via control cell)
EM Operational Emergency Management Team (simulated via control cell)
National Response Assets (simulated via control cell)

DOE-Oak Ridge Operations Office

Duty Officers
Emergency Operations Center Cadre
Public Information Office

K-25 Plant

PSS
Emergency Control Center Staff
Emergency Operations Center Staff
K-25 Security Department
K-25 Fire Department
K-25 Medical Department
K-25 Decontamination Facility Staff
K-25 Field Monitoring Teams
K-25 Safety Department
K-25 Environmental Safety and Health Department

Tennessee Emergency Management Agency
City of Oak Ridge Fire Department

More. . .

[Source: K-25 Full Participation Exercise Volunteer Response 1995]

EXERCISE SCOPE (SAMPLE 2)

Performance Test Exercise 95, "VARMINT," is being conducted by the U.S. Department of Energy (DOE), Office of Emergency Management, NN-60, to demonstrate the ability of DOE and its contractors to integrate and coordinate emergency response actions involving DOE, DOE contractors, and offsite agencies during an emergency at the Idaho National Engineering Laboratory. The following organizations are expected to participate:

1. DOE HEADQUARTERS (DOE-HQ)

- a. EOC Watch Room
- b. Emergency Management Team (EMT)
 - Technical Operations Cadre (TOC)
 - Nuclear Energy (NE) - Primary
 - Environmental Management (EM) - Collateral Executive Team
- c. HQ Support Organizations Outside the EOC
 - Public Affairs Media Response Team
 - Congressional Affairs Office
- d. DOE Emergency Response Assets
 - Radiation Emergency Assistance Center/Training Site (REAC/TS)
 - Atmospheric Release Advisory Capability (ARAC)
 - Federal Radiological Monitoring and Assessment Center (FRMAC)
 - Aerial Measuring System (AMS)

2. DOE IDAHO OPERATIONS OFFICE (DOE-ID)

- a. INEL EOC Duty Officers
- b. Facility Management Representatives (TRA, CPP, CFA)
- c. Radiological Assistance Program (RAP)
 - INEL Team
 - Rocky Flats Plant Team
 - Grand Junction Team

3. INEL SITE

- a. TRA ECC/ERO
 - On-scene Command
 - Incident Response Team (IRT)
 - Radiation Control
 - Safety

EXERCISE SCOPE (SAMPLE 2) CONTINUED

- b. CFA Facility
 - CFA ECC/ERO
 - Radiation Control
 - INEL Fire Department (CFA Station 1)
 - Occupational Medical (CFA Dispensary)
 - Fleet Management
 - Protective Force
- c. CPP Facility
 - CPP ECC/ERO
- d. INEL
 - INEL EOC/ERO
 - LMIT Human Resources
 - INEL Public Information Center (PIC)
 - INEL Warning Communications Center (WCC)
- e. NRF Facility
 - NRF ECC/ERO

4. STATE OF IDAHO

- a. Idaho Bureau of Disaster Services (BDS)
 - State of EOC staff
 - INEL EOC representative
- b. INEL Oversight Program
 - Single Point of Contact
 - INEL Oversight Office-Idaho Falls
 - INEL EOC representative
- c. Department of Health and Welfare, Division of Environmental Quality (DEQ)
 - Single Point of Contact
- d. Idaho State Police (ISP)
 - Single Point of Contact
 - Field Assistance
- e. Idaho Transportation Department (ITD)
 - Single Point of Contact
 - Field Assistance

[Source: INEL Performance Test Exercise '95 "Varmint"]

EXERCISE SCOPE (SAMPLE 2) CONTINUED

4. STATE OF IDAHO (Continued)

- f. Idaho State Communication Center
Communications Center staff
- g. Office of the Governor
Governor's Office Point-of-Contact

5. SHOSHONE BANNOCK TRIBE

Fort Hall Police Dispatch
Community Response Coordinator

6. LOCAL JURISDICTIONS

- a. Eastern Idaho Regional Medical Center (EIRMC)
- b. Bingham County
- c. Butte County
- d. Bonneville County
- e. Clark County
- f. Jefferson County

[Source: INEL Performance Test Exercise 1995 "Varmint"]

SCENARIO NARRATIVE (SAMPLE 1)

Exercise "Porcupine" begins when a cargo plane with two persons aboard collides with an airport maintenance vehicle while attempting to land at the Los Alamos airport. An airport maintenance worker in a pickup truck has been attempting to locate a foreign object, possibly a small animal carcass, reported on the south edge of the runway by a departing pilot some 25 minutes earlier. The cargo plane, an unscheduled flight, is on a final approach to the runway. Patchy low clouds cause slightly impaired visibility for both the cargo plane pilot and the airport maintenance worker.

Seconds before the aircraft touches down, the maintenance worker spots an object (subsequently identified in the NTSB accident investigation report as a porcupine) on the north side of the runway approximately 200 meters from the east end. He abruptly turns north across the runway to investigate, placing the pickup directly in the path of the descending aircraft. The pilot, attempting to avoid a collision, applies full power and pulls up but fails to clear the pickup. The left landing gear strikes the pipe rack on the pickup.

The aircraft veers left as the pilot attempts to regain control following the impact. Control surface damage and loss of airspeed prevent the pilot from regaining much altitude and attitude control. After crossing over the canyon immediately south of the airport, the aircraft impacts the process exhaust piping support structure and exhaust piping coming out of Building 3 North.

The aircraft, with both engines turning at full power, tears through the piping and elevated exhaust ductwork leading to the filter buildings. The nose of the aircraft strikes the north edge of the roof of the building approximately 2 meters east of the wall that separates rooms 301 and 352.

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory 1994]

SCENARIO NARRATIVE (SAMPLE 2)

INITIAL CONDITIONS:

- The In-Tank Precipitation process is assumed to have been on-going for the past 118 days since full operations have begun. The first cycle of waste processing has recently been completed.
- The first cycle of precipitate slurry has been completely transferred to Tank 49 via pump B5.
- Following the transfer of precipitate slurry to Tank 49 it was determined that a slurry sample calculation error had been made and a prudent decision was made to draw and analyze Tank 49 samples. Sample results conclusively indicated that the Tank 49 precipitate did not meet the 10 weight-percent PR specification. The Facility Manager and Operations Manager authorized and directed a transfer of the slurry back to Tank 48 for further filtration. (Proc. 241-FH-7QT and SPN. 81893-1)
- The jumper was installed between nozzles 19 and 20 in the HDB-7 diversion box to allow flow from Tank 49 to Tank 48 through riser C1, from nozzle 19 in the diversion box. (Work Package No. LDH-56)
- Storm drains 907-6H and 907-7H have been diverted to the Retention Basin as a procedural precaution (prerequisite) to commencing the transfer between tanks.
- The transfer of precipitate slurry from Tank 49 to Tank 48 is in progress at this time, having commenced approximately 6 hours ago. The evolution is on-going. (SPN. 81893-1) Three material balances have been performed, of which the last was at 0700. All results verify that a normal transfer of material is in progress, as expected. (Proc. Att. 241-FH-30A)
- HP has been conducting rad surveys of Tank 49, including two hour swipes of the B-3 Riser motor and baseplate. All survey results indicate normal, background radiation levels (<2mR/hr) (installed and portable VAMPs) and no contamination levels. Surveys have just been completed with the next set due two hours from now. (Proc. 241-H-1689)
- CSWE has completed moving a piece of heavy equipment on the hill. A riser plug intended for Tank 51 was sitting on the pavement near Tank 50. CSWE loaded the riser plug on a trailer and completed relocating it near Tank 42 where it will be out of the way until such time as it is needed for Tank 51. (Work Package No. HJT-26)
- The crane used to load the riser plug on the trailer is currently in the process of maneuvering around Tank 49, intending on turning between 49 and the 241-82H Control Room. (This route is being taken due to the miscellaneous pieces of equipment temporarily laying on the pavement between Tanks 48 and 49) Due to a vehicle temporarily parked in the area of his turn, near the Ops Training Trailer, the crane driver is unable to make the turn without having to go into reverse.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

SCENARIO NARRATIVE (SAMPLE 2) CONTINUED

- Two Maintenance Technicians are in the process of completing the replacement of a slurry pump motor on Tank 51 on scheduled overtime. The work has been on-going around the clock for the past 18 hours with a small maintenance crew separate from the shift crew performing the work. E & I has previously completed all electrical connections and are no longer on or at the Tank. Two maintenance personnel remain on the Tank reinstalling equipment removed to gain access to the motor. (Work Package No. DKM-73)
- An Oxalic Acid dumpster refill was completed recently and a CSWE mechanic is scheduled to arrive mid-morning to deliver the dumpster to the OA Fill Station. (Proc. 241-H-1672Q)
- A shipment of Nitrogen is scheduled to arrive at the Cold Feeds Area by noon. (Proc. 241-H-1733Q)
- The C-1 VAMP on Tank 42 is temporarily in the bypass position so that work may be accomplished on the junction box. (Work Package No. LCV-19)
- No other “exercise-related” work is simulated to be in progress or ongoing at this time.
- Any actual work that is in-progress, or ongoing, shall be discussed/briefed as needed.

Narrative Summary

Initial conditions which are assumed to have occurred prior to exercise commencement.

- Following the transfer of precipitate slurry to Tank 49 it was determined that the slurry sample calculations were in error and the precipitate did not meet the 10 weight-percent Process Requirement specification. The Facility Manager and Operations Manager directed a transfer of the slurry back to Tank 48 for further filtration.
- The jumper was installed between nozzles 19 and 20 in the HDB-7 diversion box to allow flow from Tank 49 to Tank 48 through riser C1 from nozzle 19 in the diversion box. Storm drains 907-6H and 907-7H have been diverted to the Retention Basin as a procedural precaution (prerequisite) to commencing the transfer between tanks.
- The transfer of precipitate slurry from Tank 49 to Tank 48 is in progress at this time.
- Construction has just moved a piece of heavy equipment on the new hill. A riser plug intended for Tank 51 was sitting on the pavement near Tank 50. CSWE loaded the riser on a trailer and relocated it to near Tank 42 where it will be out of the way until such time as it is needed for Tank 51.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

SCENARIO NARRATIVE (SAMPLE 2) CONTINUED

- The crane used to load the riser plug on the trailer is currently in the process of maneuvering around Tank 49, intending on turning between 49 and the 241-82H Control Room. (This route is being taken due to the miscellaneous pieces of equipment temporarily laying on the pavement between Tanks 48 and 49) Due to a vehicle temporarily parked in the area of his turn, near the Ops Training Trailer, the crane driver is unable to make the turn without having to go into reverse.
- The crane driver informs his spotter of his need to reverse, the spotter, on the Cold Feeds side of the crane, motions for the driver to reverse. The crane moves back about 8 to 10 feet and runs into the precipitate line from the B3 riser transfer pump on Tank 49. The impact is so great that the lead shielding and 3-inch line is cracked at the pipe weld on the lower side of the elbow and precipitate slurry immediately begins being pumped directly on the ground.

EXERCISE PLAY BEGINS AT THIS POINT IN TIME

- The operator, in his panic, pulls the crane forward causing friction on the now twisted line housing, generating sparks which ignite the vapors on the flowing precipitate. A small fire occurs above the precipitate as the Benzene fumes burn off. As the precipitate flows from the pipe, the fire spreads to a pallet and crate sitting near the valve box and tank edge. The fire comes in contact with the pallet and the wood ignites, starting a secondary fire.
- The crane operator immediately leaves his vehicle and notifies the Control Room of the accident and fire.
- The VAMPs (and portable VAMPs) on Tank 49 go into an alarm condition as a result of the continuing leak. The C-1 and C-3 VAMPs/transfer pump interlocks initiate and automatically shutdown the B-3 transfer pump.
- The spill stops when the pump completes its coast-down. Approximately 80-100 gallons of precipitate spills onto the pavement in the near vicinity of the pipe crack.
- Various other VAMPs on other tanks on the hill, as well as the CR PCM-1B personnel monitor go into an alarm condition in a staggered fashion in a relatively short time frame.
- As a result of the cracked pipe and the angle at which the pipe broke, the in-line leak detection sensors in LDB-4 also alarm, sending an interlock signal to shutdown the transfer pump. (The transfer pump, however, has already shutdown due to the VAMPs interlocks)
- Radiation levels at the spill source are a maximum of approximately 100 R/hr at 12 inches from the surface of the precipitate due to the direct gamma contribution and approximately 300 mR/hr due to the airborne contribution.

[Source: SRS Annual (In-Tank Precipitation) Exercise '93]

SCENARIO NARRATIVE (SAMPLE 2) CONTINUED

- Two maintenance technicians, having nearly completed work on Tank 51 are alerted by the activation of VAMPs on Tank 51. During an expedient egress towards the hill access road, one technician inadvertently steps between two pipes jamming his left leg. As he falls forward, his momentum causes a compound fracture just below the left knee. His coworker attempts to help him get away from the tank, but the injured man is in such pain that he pleads not to be moved and asks his coworker to get help.
- The Operations Shift Manager, upon receiving the report from the crane operator, should verify the shutdown of Tank 49 precipitate slurry transfer operations, verify storm drains to the Retention Basin and dispatch the First Line Ops Shift Supervisor (or other operations personnel) to assess the accident scene.
- The Operations Shift Manager should determine and implement protective actions for the H-Area Tank Farm, including ITP, classify the incident as per EPIP 6Q8-4-ITP-001, assume the position of Facility Emergency Coordinator (FEC), activate the Area Emergency Response Facilities and notify both the Emergency Duty Officer (EDO) and Area Emergency Coordinator (AEC).
- The SRS Fire Department will and HAZMAT Response Team may be notified by the EDO and respond to the incident to mitigate the fire and spill. An ambulance should be dispatched by SRS Medical to the incident scene as well.
- The uninjured maintenance technician reports at the RCA Entry Control Point, or the Security Guard House and reports the injured worker and Tank 51 VAMPs alarms.
- The fire continues to burn as a result of ignition of the nearby wooden crate and pallet containing a Tank 49 slurry pump motor covered with plastic. It burns for a total of approximately 20 minutes before going out of its own volition, if the fire department has not yet put it out.
- The FEC should consider and may decide to evacuate the Control Room to the Alternate Control Room based on Control Room habitability assessments of radiological, toxic, and fire conditions. This action, if decided on, will be controlled so as not to occur.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

SCENARIO NARRATIVE (SAMPLE 2)

The Incident Scene Coordinator (First Line Ops Shift Supervisor) should go to the Incident Command Post to interface and coordinate response actions with the SRS fire department Incident Commander. The OSC should be activated and operational within approximately 45 minutes of the emergency declaration. The TSC, EOC, EOF, and JIC should be activated and operational within 60 minutes the emergency declaration.

The injured worker should be delivered to EMS personnel standing-by near the Command Post. EMS personnel should stabilize the injured person and transport him (simulated) to SRS Medical Building 719-A for treatment.

The SRS fire department should respond to the top of the hill in an effort to determine the status of the fire (and fight it as required) and spill scene. It is expected that the fire will have gone out at approximately the time the fire department arrives on the hilltop. Field Monitoring Teams and the TRAC vehicle should be dispatched in an effort to track the radioactive plume.

The TSC staff should commence development of strategies/recommendations for the conduct of HP/IH survey/reentry operations of the scene to determine the extent of the accident. Personnel and equipment resources should be coordinated and dispatched to the Command Post in support of the reentry. HP/IH and additional personnel as deemed appropriate should conduct reentry/survey operations and map out radiological conditions and provide debriefs to the TSC/EOF as necessary.

A spill mitigation strategy should be developed and initial actions to mobilize the appropriate resources to implement the strategy should commence. Recovery planning strategies should be discussed and developed by the TSC/EOF staffs and a recovery plan outline should be prepared as a result.

The exercise is terminated upon completion and a briefing of the recovery plan outline.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

LIMITATIONS (SAMPLE)

1. An Exercise Safety Plan must be developed and approved for use during the exercise and all exercise activities shall be in accordance with this safety plan. LANL site safety and security *shall not* be degraded for the sake of this exercise. All safety and security requirements and procedures shall be complied with during the exercise as specified in the exercise safety and security plans. This shall include proper entry and exit of radiological controlled areas and security doors, and adherence to posted traffic requirements. Various event simulation aids will be used as part of this exercise. Exercise participants should respond to simulation aids as if dealing with real conditions.
2. Handling of classified information/material shall be in accordance with LANL Standard Security/Safeguards Policies and Procedures (Chapter 5 of the Laboratory Manual).
3. Telephone security requirements shall be in accordance with Security/Safeguards Policies and Procedures.
4. Empirical meteorological data cannot be obtained unless the capability to access a real-time source of meteorological information is demonstrated.
5. **No** unplanned simulations may be allowed unless approved by your **lead controller**.
6. Emergency response vehicles shall not use sirens or speed in excess of posted limits.
7. The exercise director and lead exercise controller must be informed of all real emergency conditions affecting the LANL site. The exercise director is solely responsible for terminating exercise activities on the LANL site. *This individual will determine when and if the exercise may be placed in an Administrative Hold for any reason.*
8. Protective Technology Los Alamos (PTLA) Forces will provide Shadow Force personnel for each post identified by the Scenario Development Group PTLA representative.
9. LANL employees should respond to emergency signals in a manner consistent with good radiological/safety and security practices. No radiological or security barriers will be breached as a result of any energized emergency signal.
10. If required, facility evacuation will be complete when vehicles to be used for the evacuation have been loaded and started. No vehicles shall actually be moved. When it is determined the time required to complete the evacuation has passed, personnel should be directed to go indoors and remain there until one of the following conditions is met:
 - A decision is reached to reduce the impact area. Personnel located outside of the revised impact area will be allowed to move around as long as they don't attempt to enter the reduced impact area.
 - The exercise is terminated.
11. If determined to be necessary, no fire hoses shall be charged and no fire extinguishers shall be actually discharged.
12. There will be no non-exercise traffic allowed into the TA-21 Area during the exercise unless approved by the exercise director/lead exercise controller.
13. No actual manipulation of plant systems, equipment, or operations will be allowed by any person other than by qualified facility Operations personnel.

[Source: Exercise Porcupine, Performance Test at Los Alamos National Laboratory 1994]

RESPONDER RULES OF CONDUCT (SAMPLE 1)

USE GOOD DRILLSMANSHIP

- Understand the scope of the exercise. If you're not sure about a certain organization's or agency's participation in the exercise, ask a controller.
- If the scenario seems to be incredible, don't complain. Recognize that the exercise has objectives that must be satisfied and may require doing things that may not be as realistic as we would like.
- Speak out loud when you are taking action. Recognize that a controller or evaluator is not a mind reader and that you will only get credit for actions of which the evaluator is aware.
- Act on all controller instructions. With the exception of safety issues, even if you don't agree with what the controller is telling you, don't argue. Complete the required actions and make a note to discuss your disagreement at the end of the exercise during the critique. Remember, the controller has the final word.
- Don't engage in casual conversations with the controllers. If you are asked a question, give a short concise answer. If you are busy and cannot immediately respond, indicate that, but report back with an answer at the earliest possible time.
- Do not engage in any conversations with observers or evaluators. If an observer or evaluator persists in talking with you, ask a controller for assistance.
- Maintain a log of your activities. Many times this will be the only documentation of activities that may have been missed by and controller or evaluator.

[Source: Controller/Evaluator Manual]

RESPONDER RULES OF CONDUCT (SAMPLE 2)

- Players shall not have prior knowledge of the scenario. Players who have gained knowledge scenario specifics prior to the exercise are expected to consult with the exercise manager to determine their eligibility to participate in the exercise. Failure to adhere to this rule could result a remedial exercise to be performed.
- The exercise scenario shall not include any actions or situations which degrade the condition of systems, equipment or affect the detection and assessment of actual emergencies, or of the capability for response to actual emergencies.
- No actions shall be initiated which involve actual operation of plant equipment or affect operating capability.
- Emergency response facilities will not be pre-activated and response personnel will not be pre-staged. Players will follow their normal work routines until exercise events cause them to initiate emergency response actions.
- Site personnel will respond to and implement all protective actions as directed by the AEC/EDO/EOC Manager.
- Except for the actions identified in the list of actions to be simulated, or as otherwise directed by exercise controllers, players are to respond to exercise events and information as if the emergency were real.
- Players shall act as if simulated hazardous conditions were real. All normal industrial/health protection controls shall be adhered to for the simulated hazard(s) presented by the exercise scenario.
- Exercise controllers and evaluators are exempt from simulated security and industrial/health protection controls (only) which would be required by exercise conditions.
- Exercise participants shall take no action that reduces the safety of SRS or the public.
- Exercise participants shall adhere to public laws including traffic regulations and follow any orders given by law enforcement personnel.
- Controllers will only provide players with the information which they are specifically designated to disseminate in their assigned functional area. Players are expected to obtain other necessary information through existing emergency information channels.
- In the event that players do not initiate actions critical to the successful completion of the exercise scenario, controllers will issue contingency messages which direct players to initiate specific actions.
- All exercise messages and communications shall be preceded and followed by the phrase, "THIS IS A DRILL" or "THIS IS AN EXERCISE."
- In some cases, it may be necessary for a controller to countermand player actions to preserve the continuity and objectives of the exercise. Players must accept the controller's word as final and proceed.

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

SIMULATIONS (SAMPLE 1)

Most SRS exercise activities will actually be performed as if the incidents were really occurring. The following list identifies actions to be simulated when and if these actions are indicated in response to scenario events. Additionally, controllers may direct participants to simulate certain activities to avoid performing actions that may cause adverse effects.

- Accident scene(s), damaged equipment, injured personnel, etc. These simulations will be accomplished through the use of props and role players to a reasonable extent (e.g., smoke generator(s) and red/brown colored smoke for toxic fumes, DOT HAZMAT packaging/markings for transport vehicle and hazardous chemical containers (drums), colored water to simulate liquid chemical, 32 moulaged actors for injured/dead victims, damaged/overtaken truck, tractor trailer and bus to simulate vehicle accidents, live fire simulating vehicle fire.)
- "Site" meteorological conditions will be "canned." ("Scene" meteorological conditions will be "live/actual.")
- Public notification or other actions affecting the general public.
- Notification to FEMA, EPA, NRC, DOT and the National Response Center. A control cell will be used to simulate non-participating agencies/organizations.
- Departures from normal procedures that could compromise the security of SRS facilities.
- Use of lights and sirens on emergency vehicles traveling offsite.
- Perimeter barricade closures (with the exception of site barricade 2, which will initially (actually) be closed, though transparent to players due to its proximity to the accident scene, and site barricades 3 and 4 which will actually close, upon declaration of an SAE, due to implementation of a protective action to preclude traffic from the potentially downwind keyhole areas).
- Breaking ground at the incident scene through use of heavy equipment (e.g., bulldozers, backhoes, etc.)
- Call-out of additional SRS personnel to comprise the recovery planning organization.

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

SIMULATIONS (SAMPLE 2)

1. Moulage will be used to simulate injuries on two of the accident victims. A rescue dummy will be used to simulate the deceased employee.
2. A control cell will be set up to simulate local, state and regional federal agencies not participating; public/media calls, and political contacts/notifications. Actors will be used to simulate injured victims at the event scene, mock media going to the INEL PIC, and Eastern Idaho Regional Medical Center, and the simulated public/media traveling past traffic barricades. An Exercise Telephone Directory will be provided with phone numbers to be used when contacting simulated agencies/organizations.
3. Two employees from the TRA will be designated as being contaminated upon arrival at the South staging area. Three employees going through the ICPP portal monitors will be identified as being contaminated. These personnel will be pre-identified and wearing new, unlaundered protective anti-C clothing when identified as being contaminated.
4. Next-of-kin notification will be made real time to only one of the injured employees; next-of-kin notifications to the second injured employee and the deceased employee will be made to a control cell family actor.
5. Modesty clothing, worn under normal clothes, will be used to simulate nudity.
6. Upon completion of accountability at the TRA and CPP, two bus loads of employees from each area will be sent to the relocation area. All other employees will return to work.
7. Prior to TRA employees being allowed back into the area, an exercise boundary will be established around the ATR, TRA training building, and the TRA ECC. Only personnel participating in the exercise will be allowed into the areas.
8. One Patrolman from the 405, 505, and 515 Central Alarm Stations will be designated exercise exempt personnel, and remain at their posts during the evacuation. All other Patrol personnel stationed at the CAS locations should participate in the evacuation and exercise-related activities per post orders.
9. Implementation of public protective actions to be taken off the facility will be simulated. Access control points outside of TRA should be simulated by parking the security vehicle along the roadside where the roadblock has been directed to be set up with its emergency lights flashing. The vehicle should remain in position as long as the access control point is required. No traffic should be impeded at the simulated access control points. Access control in the TRA will not be simulated. Not previously identified, exercise-exempt personnel may be passed through access control points on case basis by the area lead controller.

[Source: INEL Performance Test Exercise 1995 "Varmint"]

SIMULATIONS (SAMPLE 2) CONTINUED

10. Actual broadcast of emergency information over local TV and radio stations will be simulated in accordance with the Media Plan.
11. Canned meteorological representative of the expected actual meteorology will be used for the exercise. Exercise participants shall use the canned met for all activities associated with the exercise.
12. The ATR Training Simulator will be used as the ATR Reactor Control Room. Two complete crews will be utilized the day of the exercise - the operating crew that will continue normal plant operations, and the exercise crew that will respond to postulated scenario events. The exercise scenario is modeled by the ATR simulator - plan conditions are displayed to the exercise crew of reactor operators as if the actual accident sequence were occurring. Since the simulator is remote from the ATR Control Room, a "clone" Shift Manager will be stationed at the ATR to implement orders of the "exercise" Shift Manager that cannot be performed in the simulator, such as sounding of plant alarms. Exercise plant operators will be positioned in the ATR to simulate carrying out the orders of the exercise Shift Manager, verbalized by the "clone" Shift Manager.
13. In the event the simulator is not functional for, or becomes dysfunctional during the exercise, simulator controllers will provide thermal-hydraulic and radiological data by messages, by data sheets, or verbally.
14. All exercise participants will receive exercise information by messages, cue cards, data sheets, or verbalizations from controllers and actors.
15. Fuel loading restrictions prevent operating the ATR at 200 Megawatts for 30 days. However, for the purpose of meeting exercise objectives, notwithstanding the restriction, it is simulated that such power operation is possible.
16. The collegial decision-making to determine Program Office activation of the DOE-HQ EMT will be simulated. The decision to activate a NE EMT by a decision of EM-1 and NE-1 will be simulated. An exercise controller message will be given to the DOE HQ Watch room requesting them to make the senior management notifications and advise them an EMT is being activated.
17. Off-site releases driven by the exercise scenario will not require a change of Program Office responsibility for oversight of the emergency response at the site. For the purposes of this exercise, NE will remain the primary program office responsible for the ATR incident.

[Source: INEL Performance Test Exercise 1995 "Varmint"]

SIMULATIONS (SAMPLE 2) CONTINUED

Actions Requiring Demonstration

1. Applicable notifications.
2. Implementation of protective actions at facilities playing in accordance with the Scope Statement.
3. Accountability of personnel at affected facilities.
4. Search and rescue operations at affected facilities.
5. Establishment of the Incident Command System if appropriate.
6. Implementation of access control requirements.
7. Treatment of simulated injured individuals at the event scene, CFA, and EIRMC.
8. Assessment and decontamination of personnel found to have simulated chemical or radiological contamination on their skin or clothing.
9. Activation and staffing of Emergency Response Facilities.
10. Hazardous materials consequence assessment based upon default and computer projections, and upon field sampling.
11. Dispatch of field sampling teams.
12. Response to inquiries from individuals, organizations, and agencies.
13. Conduct of media briefings.
14. Use of established emergency repair procedures, actions to obtain repair parts if applicable, staging required tools and other repair equipment.

[Source: INEL Performance Test Exercise 1995 "Varmint"]

TIMELINE OF KEY SCENARIO EVENTS (SAMPLE 1)		
TIME	EVENT	MSG #
0800	Controllers in position.	1
0815	Initial conditions provided, victims positioned.	2
0830	Event occurs, fire alarm annunciates, smoke simulation initiated, water simulation ready, radiological and medical data available, and 911 calls initiated. (E.2)	3
0831	Facility Command Leader assumes role of Incident Commander, assesses situation and directs personnel to assemble area located northeast of Building 150. (E.1, E.3)	
0832	PTLA CAS operator makes general broadcast concerning event info., LAFD dispatched, emergency verified by contact DP-West Guard Post. (F.24, F.25) LAPD initiates internal notifications. (M.1) JCI Airport Manager notifies JCI management concerning crash. Closes airport to all traffic.	
0834	EM&R Duty Officer responds, EM&R Staff activates ETSC and notifies other Lab resources to respond. DP Facility Command Leader assesses situation, and notifies facility line management. (E.2, F.4)	
0835	LAFD arrives and stops on the DP rd. west of the DP West access gate, assesses met information, visually observes smoke passing over access road to the crash scene and based on that information decides to locate the Command Post outside the crash area. (L.1) Area TA-21 personnel located outside the immediate event area directed to take cover. (E.1, F.5) LAPD establishes access control at Trinity & DP Road. [Note: Alpha-numeric indicator in parenthesis are exercise objectives] [Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]	4

TIMELINE OF KEY SCENARIO EVENTS (SAMPLE 2)

Time	Activity
8:10	F. Johnson affixes ACME sign and telephone number to van.
8:15	DuPage County Sheriff's Police are pre-staged at North Gate Road and Cass Avenue. M. G. (Controller) will page A. B. (Security) at 708-722-7540 to confirm that they are in place.
8:20	Robber Pete Johnson arrives in his van outside the North Gate. He drives to the Credit Union.
8:30	Robber enters Credit Union and announces hold-up. Robber states that he has a weapon and shows stick with gun label.
8:32	Robber tells everyone to gather by the central area and sit down. Silent alarm goes to Central Alarm station.
8:33	Rich Stoehrmann enters the Credit Union to cash a check. The robber sees him come in and orders someone to lock the front door. In a few minutes, Rich Stoehrmann manages to slip out the back door. If MSI is on the scene, Rich will go to them and tell them what is going on in the Credit Union. If there are no emergency responders around, Rich will walk to the lobby of building 201 and call 911 with an exercise message.
8:35-8:40	Robber gathers fake cash and requests money from the safe. He spends at least 10 minutes in the Credit Union. He then leaves with hostage (receptionist Brenda) through the back door. He tells her to put her hands up. He has the labeled stick pointed into her back. Upon exiting, the hostage states to MSI or Fire Department personnel, "This is an exercise. Be careful, he has a gun. This is an exercise."
8:40-8:45	Robber and hostage drive out North Gate toward Cass Avenue. Robber lays the gun down on the seat.

[Source: ANL Security Exercise 1996]

TIMELINE OF KEY SCENARIO EVENTS (SAMPLE 2) CONTINUED

8:45-8:50 Robber's van goes off the road and strikes a tree along North Gate Road. Brenda grabs the gun and gets out of the van. She tells the robber to get out and to put his hands up. She holds him in this position until relieved by DuPage Sheriff or until directed by the controller.

8:55 The robber is (simulated) taken into custody.

Remainder of the scenario is provided by controller messages. DuPage sheriff personnel will not handcuff or restrain the robber. The remainder of the exercise will be a development of a plan to deal with remaining issues.

[Source: ANL Security Exercise 1996]

MESSAGE INJECT (SAMPLE 1)

TO: ALL EXERCISE CONTROLLERS
ETSC CONTROLLER

TIME: 0815

FROM: TIMELINE COORDINATOR

SUBJECT: INITIAL EXERCISE CONDITIONS

THIS IS AN EXERCISE

All Exercise Controllers:

Inform exercise responders of the following weather information: The forecast is for low clouds and possible snow showers this morning, clearing by late afternoon. Temperatures are expected to warm to around 40 degrees (F) this afternoon, dropping into the high teens tonight. Winds are from the south and are expected to be light and variable during the morning, increasing to 6-12 mph by the evening.

ETSC Controller:

Begin providing the meteorological data information provided as a table in the met section of the exercise package.

THIS IS AN EXERCISE

EXPECTED ACTIONS: Responders will use the met information to implement protective actions, set up an incident command post, and develop dose projections to determine if additional protective action recommendations are required.

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory 1994]

MESSAGE INJECT (SAMPLE 2)

MESSAGE: 9

TO: Operations Shift Manager/CR operator
FROM: Crane Operator Role Player
TIME: 0748
NOTE: You are role-playing the Crane Operator. Report to the CR in an “excited” manner.

Provide the message below and answer CRO questions as appropriate, staying within the bounds of the information available for input below. *Do not* create any other information. If an issue or question arises that you can't readily answer within the scope of the information, ask for help from the CR lead controller.

THIS IS A DRILL

DO NOT initiate actions affecting normal site operations.

I am the Crane Operator working on the hill. I just had an accident. I was trying to get by the tank just outside the Control Room but a car was blocking my way. I backed into a pipe on the side of the tank. I think the pipe cracked open. There is a leak of fluid coming from the pipe.

(Continue talking only if you are allowed to do so. Provide individual statements/responses based on questions asked of you. Do not “lead” players to ask questions.)

I drove the crane about 20 feet away from the accident before coming here.

My name is (Role Player Name). I work in CSWE. My supervisor is (John Johnson).

I didn't see the pipe on the side of the tank. I didn't even think I had hit anything.

THIS IS A DRILL

DO NOT initiate actions affecting normal site operations.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

CONTINGENCY MESSAGE INJECT (SAMPLE 1)

Message Number 19C

THIS IS A CONTINGENCY MESSAGE

From: Senior Controller

To: EOC Controller

Time: +35 minutes

Subject: Classifying the Emergency

Special Instructions:

1. Record the time the State Highway Patrol called in the accident at White Oak Dam.
TIME _____.
2. If the EOC has not classified the emergency by the time of this message, call the senior Controller.
3. When directed by the senior Controller, tell the Crisis Manager the following:

 "This is an exercise. You are directed by the senior Controller to classify the emergency as a General Emergency. Continue to perform all duties as you would under these conditions. This is an exercise."

4. Record the time you told the Crisis Manager to classify the event.

TIME _____.

[Source: ORNL Tabletop Exercise 1994]

CONTINGENCY MESSAGE INJECT (SAMPLE 2)

MESSAGE: 14C (CONTINGENCY MESSAGE)

TO: Operations Shift Manager

FROM: CR Lead Controller

TIME: 0815 (If the SM has not declared an emergency declaration (ECL) and it does not appear that he will do so imminently.)

NOTE: Provide the message below directing the SM to declare a Site Area Emergency.

THIS IS A DRILL

DO NOT initiate actions affecting normal site operations.

MESSAGE:

"FOR THE PURPOSE OF THIS EXERCISE, YOU ARE DIRECTED TO DECLARE A SITE AREA EMERGENCY CLASSIFICATION BASED ON EMERGENCY CLASSIFICATION EPIP 6Q8-4-001, EMERGENCY ACTION LEVEL CRITERIA 3-B-SA-2.6."

"YOU ARE DIRECTED TO CONTINUE YOUR EMERGENCY RESPONSE ACTIONS BASED ON THIS INFORMATION/DIRECTION."

THIS IS A DRILL

DO NOT initiate actions affecting normal site operations.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

GENERAL FACILITY INFORMATION (SAMPLE 1)

The Test Reactor Area (TRA) is located in the southwestern portion of the Idaho National Engineering Laboratory (INEL), 4.9 miles northwest of the Central Facilities Area (CFA). Approximately 695 people are employed at the TRA.

The area was originally established in the early 1950s with the development of the Materials Test Reactor (MTR). Two other major reactors followed: the Engineering Test Reactor (ETR) and the Advanced Test Reactor (ATR). The ETR has been inactive since January 1982. The MTR was shut down in 1970 and the building is now used for offices, storage, and test areas for the Idaho Chemical Processing Plant (ICPP).

The mission of the TRA is to provide facilities, utilities, and support capabilities to enable government and private agencies to conduct experiments associated with the development, testing and analysis of material utilized in nuclear and reactor applications.

There are 80 buildings and 63 structures existing and being utilized at the TRA. These facilities have been modified to fit the changing needs of the INEL and now provide the following major types of functional space: reactor, laboratory, office, training, and craft support for maintenance.

The major program located at the TRA is the ATR and more than half of the existing TRA personnel provide direct support to it. The remaining personnel support numerous programs and activities located throughout the INEL.

[Source: INEL Performance Test Exercise 1995 "Varmint"]

GENERAL FACILITY INFORMATION (SAMPLE 2)

DP West is located in Technical Area 21 on a mesa adjacent to the LANL Municipal Airport. There are five separate operations taking place in TA-21: Tritium Storage and Testing in TSTA, Tritium Storage and Testing in TSFF, Laboratory Testing in the North half of DP West (East side), Decontamination in the South half of DP West (West side), and research in West end of DP West. TSTA and TSFF are located in one large facility, but are split by a security barrier. Access to TSFF is gained by entering the DP West gate and driving around the south side of the buildings to the TSFF. The East end of DP West has industrial security requirements, while the West end of DP West does require regular security clearances for access. A common security boundary splits these two operations. There is only one road into the TA-21 and that is down DP Road from the Los Alamos Townsite, etc....

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

SPECIFIC FACILITY INFORMATION (SAMPLE 1)

North End Plant Operations

The north half of the building is isolated from the remaining Building 3 operations; it has been used for many years as offices and research labs. Several of the laboratories contain flammable materials. Rooms 301 and 301-A are used for U and thorium (Th) chemistry; both of these laboratories contain a few gallons of flammable solvents. Room 301 contains a small acetylene cylinder, while room 301-A operations use a standard hydrogen cylinder. Room 301-B, also used for U and Th experiments, contains about 100 gallon of organic solvents. Room 307 is used for transition metal chemistry, and it contains several gallons of flammable liquids (acetone, alcohols, etc.) and three cylinders of hydrogen or deuterium. The laboratory also contains one standard cylinder of hydrogen and one of deuterium. . . . (more)

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

SPECIFIC FACILITY INFORMATION (SAMPLE 2)

The TRA is divided into seven sections. The ATR section, located on the northwestern end of the TRA, contains the large ATR building, an office building, the reactor's cooling tower, ATR maintenance support and warehousing facilities, and several smaller buildings. This section is joined to the rest of the TRA through such systems as waste lines and roads; however, it has a power system that is separate from the major supply to the MTR and ETR. The ATR section power is supplied underground from the main TRA substation to the transformers on the northeastern corner of the ATR building.

The ATR, one of the largest and most advanced test reactors, has operated continually for over 25 years. Construction of the ATR was completed in 1965 with initial start-up in 1967. Operation under full power began in 1969. During normal operating day shift hours, there can be as many as 40 employees in the ATR.

The ATR is a 250-MW thermal nuclear reactor designed to study the effects of intense radiation on samples of reactor materials, especially fuels. The unique design of ATR includes a core containing the following: (a) 40 fuel elements in a serpentine arrangement, (b) beryllium reflector blocks, which contain cutouts for the outer shim control cylinders, specimen holes, and capsule irradiation facilities; (c) the neck shim (NS) rod housing, which contains the neck shim rods, regulating rods, fixed shim rods, and irradiation holes; (d) safety rods; and (e) sections of in-pile pressure tubes (IPTs), which are occupied by loop experiments.

The reactor design provides (a) high thermal neutron density and the ability to adjust neutron density within the test region, (b) relatively flat axial flux distribution, and (c) the ability to vary the fast-to-thermal-flux ratio. ATR uses the flux trap principal, and the ATR fuel geometry forms five cylindrical flux traps located in the northeast, southeast, northwest, and southwest corners and in the center.

The duration of a typical irradiation cycle is 5 to 50 days. IPT test trains are selected for the cycle with the optimum conditions for their samples. The test trains contain samples of reactor materials or fuel that require exposure to various neutron fluxes in order to simulate different environments. For example, a special type of test, referred to as a powered axial locator mechanism (PALM) experiment, simulates the changes in temperature and neutron flux that reactor materials experience during numerous startups and shutdowns. These experiments are moved into and out of the reactor core at specified time intervals for a certain number of iterations. The movement of the test train will cause insertion of positive and negative reactivity, thus producing variations in reactor power. Therefore, the cycling range is limited to control the effect on reactor power within the range of the regulating rod.

[Source: INEL Performance Test Exercise 1995 "Varmint"]

SPECIFIC FACILITY INFORMATION (SAMPLE 2) CONTINUED

At the end of an irradiation cycle, the reactor is shut down to refuel and remove selected IPT test trains and miscellaneous samples from other irradiation facilities within the core. The removal and insertion of IPT test trains and samples are conducted from the reactor top using five large elliptical ports located in the top head of the reactor vessel.

The ATR is housed in a building that is approximately 200 ft. square and extends 60 ft. above and below grade. Two full basements house experiment cubicles and control panels, subpile room, control rod access room, reactor primary system equipment, and ventilation equipment. The building substructure is constructed of heavily reinforced concrete supported by subsurface rock.

The superstructure is constructed of steel frame with exterior walls primarily of insulated aluminum sandwich panels. A major portion of the building is a gas-tight confinement that includes the reactor operating area, the control room, and the basements. The perimeter surfaces of the confinement are of concrete, masonry, or welded steel plate with all penetrations, including doors, hatches, and ventilation ducts carefully sealed or gasketed.

[Source: INEL Performance Test Exercise 1995 “Varmint”]

METEOROLOGICAL DATA (SAMPLE 1)

Weather conditions, Wednesday 3/23/94

Several inches of snow fell in Los Alamos on Monday afternoon and evening. Most of it melted off during the day on Tuesday when highs pushed into the mid 40s with afternoon sunshine, although patches remain in sheltered spots. Clouds moved back into the area late Tuesday keeping overnight temperatures moderate. Lows in the upper Rio Grande valley were generally in the 30s with the Santa Fe airport reporting 34 degrees (F) at 5:00 AM. Los Alamos reported an overnight low of 29 degrees. Some light snowfall was reported in areas above 6,500 feet, although none fell in the immediate vicinity of Los Alamos.

At Los Alamos this morning, skies are overcast with threat of precipitation. Relative humidity is 91 percent. The ceiling is at 9,200 feet with clouds extending to 13,000 feet. There is scattered light ground fog in places. Winds are light easterly.

Today's Forecast:

Today's forecast for the upper Rio Grande valley includes light snow possible, with rain showers in lower elevations, tapering off by noon. Highs will be in the 40s with sun breaks by mid-afternoon and general clearing expected by sunset. Lows tonight should reach the low 20s in Santa Fe and vicinity. Winds will be southerly 5-15 mph, becoming southwesterly late in the day.

For Los Alamos, the forecast is for low clouds and possible snow showers this morning, clearing by late afternoon. Temperatures are expected to warm to around 40 degrees (F) this afternoon, dropping into the high teens tonight. Winds are expected to be light and variable in the morning, increasing to 6-12 mph from the south by this evening. Winds aloft are southerly to about 8,500 feet and southwesterly above 8,500.

Extended forecast:

Generally, clear skies will prevail over northern New Mexico for the next 72 hours. No precipitation is expected. Winds will be generally from the south and southwest at 5-15 mph, shifting to northerly by late Friday or early Saturday.

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

SAMPLE 2				
SRTC WIND SYSTEM				
SRS METEOROLOGICAL DATA SYSTEM				
15-Minute Period Ending: 1:00 PM EDT 11/14/95				
Area Tower				Site Area Mean (SAM) (2 meters) Central Climatology Wind Speed: 4.3 mps; 5.6 mph Temp.: 98.3 Deg F Rel Humidity (2 m): 75% Barometric Pressure: 1002.9 mb Sky Cover: 0.2
61 meter (mps/MPH)	10 meter (mps/MPH)	Wdir (Deg from)	Stability Class	
A 2.7/5.0	2.0/4.5	238(WSW)	D	
C 3.3/7.3	2.5/5.5	221(SW)	D	
D 1.5/3.4	1.2/2.6	220(SW)	D	
F 2.5/5.7	1.9/4.3	239(WSW)	D	
H 0.7/1.5	0.5/1.1	180(S)	D	
K 2.1/4.5	1.6/3.5	212(SSW)	D	
L 2.5/5.5	1.0/4.2	221(SW)	D	
P 2.4/5.4	1.3/4.1	21(SSW)	D	
SAM 5.5/12.3		245(SW)	B	

HAZARDOUS MATERIALS DATA (SAMPLE 1)**ENVIRONMENTAL MONITORING DATA****MAP SET #1 (CLOSE IN)****TIME: T+5-10**

Site	Air Conc.	CPM/ft ³	Deposition	CPM/100 cm ²	CPM Direct
A	2E-6	1.3E+4	0.8	6108.0E2	
B	3E-7	1.9E+3	0.5	3605.0E2	
C	1E-7	6.3E+2	0.02	152.0E1	
D	1E-7	6.3E+2	1.6	12201.6E3	
E	6E-8	3.8E+2	1.8	13701.8E3	
F	3E-8	1.9E+2	0.9	6809.0E2	
G	1E-8	6.3E+1	0.4	3004.0E2	
H	3E-8	1.9E+2	2.9	22002.9E3	
J	4E-7	2.5E+3	8.0	61008.0E3	

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

HAZARDOUS MATERIALS DATA (SAMPLE 2)

Benzene Chemical Concentration Field (Measured) Data/Maps:

Controller Information / Instructions:

The three accident scene chemical concentration maps provided on the following pages provide chemical concentration data to be interpolated by controllers and provided to players, as appropriate, based on the IH instrumentation used near the accident scene during the exercise.

An Explosimeter (% LEL and % O₂) Data Table follows the chemical concentration maps and will be used by scene and/or forward command post controllers if emergency responders enter the affected area with an explosimeter.

A Building Concentration Table follows the explosimeter data table and will be used by scene/area protective action controllers if emergency responders (or non-essential personnel) enter or are in affected area buildings that have not had ventilation secured without appropriate protective equipment.

A Symptomatic Data Table follows the Building Concentration Table and will be used by scene/area protective action controllers if emergency responders (or non-essential personnel) enter the affected area without appropriate protective equipment.

IH instrumentation maintained and available at SRS that may be used to detect benzene airborne concentrations consists of Drager tubes, Microtips and HNUs. The Drager reads out in units of 0-10 ppm for benzene. Both the Microtip and HNU have an instrument range of 0-2000 ppm, and are directly calibrated for benzene. For Drager tubes, concentration data will not be given in values in excess of 10 ppm, based on the instrument range and the location of the responder performing the monitoring function. Likewise, for the Microtip or HNU, concentration data will not be given in values in excess of 2000 ppm, based on the instrument range and the location of the responder performing the monitoring function. The maps indicate levels which may be in excess of the instrumentation used, for a controller frame of reference and for possible use by the scene and area protective action controllers in providing ad hoc toxic symptomatic data to any player(s) who enter or are in the plume without respiratory protection.

[Source: SRS Annual (Defense Waste Processing Facility) Exercise 1995]

HAZARDOUS MATERIALS DATA (SAMPLE 2) CONTINUED

This data is time sensitive as detailed on each individual map or table. The data remains in effect as per the individual maps/tables until such time as the player organization performs (simulated) actions to knock down the vapor cloud, neutralize and/or cover the spill. Mitigative actions could include (simulated) spraying the vapor cloud with water, spraying AFFF foam on the spill and/or in the inner tank and/or (outer tank) annulus and/or neutralizing it with other suitable agent(s) per the applicable procedures.

Benzene Chemical Concentration Field (Measured) Data/Maps:

Controller Information / Instructions:

Controllers approaching the accident scene with players shall conservatively use a directly proportional (concentration vs. distance) relationship when judging concentrations in a given concentration "foot print" depicted on the maps which follow.

IH Habitability survey data (Drager tubes, Microtip or HNU) for the Forward Command Post (FCP) shall be "As Read" for the duration of the exercise due to its anticipated (and procedurally driven) upwind establishment.

In the extremely remote possibility that the FCP is established very nearby and crosswind or downwind of the spill scene, appropriate airborne concentration data and symptomatic data will be provided to the player organization in a coordinated fashion, ad hoc, by the accident scene and forward command post lead controllers.

FMT controllers assigned to Field Monitoring Teams shall refer to the Expanded (0-1/2 mile) chemical concentration map to provide chemical data to FMTs. Concentrations trend up to a maximum of approximately 6 ppm (< ERPG-1) then back down to 1 ppm and background (during a three hour time frame) as the chemical plume travels across F Road, down wind of the OWST spill/S-Area. (It is not anticipated that FMTs will be directed to travel F Road close enough to "experience" chemical concentration readings.) By definition, readings taken at any location outside of the chemical concentration foot print curves are As Read, i.e., background.

[Source: SRS Annual (Defense Waste Processing Facility) Exercise 1995]

HAZARDOUS MATERIALS DATA (SAMPLE 2) CONTINUED

Scene Explosimeter Data

Benzene [Conc] * % LEL (Explosimeter)

150 ppm	=	1%
300 ppm	=	2%
500 ppm	=	3.5%
1000 ppm	=	7%
2000 ppm	=	14%
3000 ppm	=	21%
4000 ppm	=	28%
5000 ppm	=	35%
5500 ppm	=	38.5%
6000 ppm	=	42%

To determine the explosimeter % LEL for benzene at a particular chemical concentration:

$$\text{Benzene (ppm)} \times .007 = \% \text{ LEL}$$

(Refer to the accident scene chemical concentration maps to first determine chemical concentration fields, based on player distances/locations, at which point explosimeter readings may be determined and provided.)

NOTE: % O₂ (instrument readings) remain "As Read" (normal values) for the duration of the exercise.

[Source: SRS Annual (Defense Waste Processing Facility) Exercise 1995]

HAZARDOUS MATERIALS DATA (SAMPLE 1)**BUILDING CONCENTRATION LEVELS (IN PPM)**

Bldg.	Ventilation Secured On Time	Ventilation Secured Late				Ventilation Never Secured			
No.	0800 - End	0830- 0900	0900- 0945	0945- 1045	1045- 1200	0830- 0900	0900- 0945	0945- 1045	1045- 1200
831-S	0	0	2	4	1	0	6	10	3
831-10S	0	0	3	5	1	0	8	12	4
981-S	0	0	1	2	0	0	2	5	1
704-103S	0	2	4	12	2	6	12	35	6
704-104S	0	0	3	5	1	0	10	14	5
511-S	0	2	4	12	2	6	12	35	6
511-1S	0	0	3	5	1	0	8	12	4
511-2S	0	0	2	4	1	0	6	10	3
704-112S	0	0	3	5	1	0	10	14	5
717-11S	0	0	1	2	0	0	2	5	1
704-113S	0	0	2	4	1	0	6	10	3
704-82S	0	0	3	5	1	0	8	12	4
704-41S	0	0	1	2	0	0	2	5	1
704-42S	0	0	2	4	1	0	6	10	3
263-158S	0	0	1	2	0	0	2	5	1

NOTES: Provide symptomatic data (below) to occupants based on concentration values (indicated above), building protective action (ventilation line-up) in effect and time frames for which individuals are "immersed", therefore for which symptoms would be experienced. Symptomatic data assumes individuals are not wearing appropriate protective (breathing) equipment. Do not provide numerical values (unless an appropriate instrument is in use).

Chemical concentration values for times before 0830 and after 1200 are zero ("0") for all buildings, regardless of ventilation status.

If an S-Area building is not listed, concentration values are not applicable (background).

ASSOCIATED VAPOR CONTACT/INHALATION SYMPTOMS

1-5 ppm: Immediate	Sweet odor.
50-100 ppm: >20 minutes	Sweet odor, light headache/mild weariness.
1500 ppm: > 20 minutes	Sweet odor, severe headache and weariness.
1500 ppm: > 20 minutes	Sweet odor, severe headache and weariness, mild respiratory irritation, beginning to feel drugged

References: Patty's Industrial Hygiene and Toxicology, Vol. IIB, 1981, 3rd Edition
Sax's Dangerous Properties of Industrial Materials, 8th Edition,
Vol. 1
Chemical Hazardous Response Information System (CHRIS),
Book 1

[Source: SRS Annual (Defense Waste Processing Facility) Exercise 1995]

**HAZARDOUS MATERIALS DATA (SAMPLE 2) CONTINUED
SYMPTOMATIC DATA TABLE**

Exp. Time	PPM	Effects of Benzene
VAPOR INHALATION		
Immediate	1.5	Sweet odor is noticeable.
Undetermined	25	No physical effects, but benzene is detectable in the bloodstream.
Undetermined	50-100	Headache and weariness may occur.
Undetermined	500	Headache more pronounced.
Undetermined	1500	Symptoms of illness may appear. Individual may begin to feel drugged, with headache and mild respiratory irritation.
0.5 - 1 hour	3000	Severe vomiting may result some time after exposure.
Undetermined	3100 - 5000	Individual feels intoxicated, experiencing giddiness, drowsiness, dizziness, and a feeling of warmth. Severe respiratory irritation.
0.5 - 1 hour	7500	Individual becomes intoxicated quickly, with an increased heart rate, followed by flushing, weakness, headache, breathlessness, constriction of chest and fear of impending death.
>10 minutes	19,000 - 20,000	Rapidly fatal. Intoxication followed by coma, convulsions, respiratory failure and death.
DIRECT CONTACT WITH LIQUID		
Immediate	N/A	Direct contact reddens, blisters, dries out and irritates skin.
Immediate	N/A	Swallowing liquid (>10 ml.) is fatal.
<p>Note: Outdoor and building (indoor) exposure levels do not exceed a maximum of approximately 1500 ppm, except very close to the spill. The additional exposure data for > 1500 ppm is provided only for a frame of reference and for Accident Scene Lead Controller use, if appropriate.</p> <p>REFERENCES:</p> <p>Patty's Industrial Hygiene and Toxicology, Vol. IIB, 1981, 3rd Edition Sax's Dangerous Properties of Industrial Materials, 8th Edition, Vol. 1 Chemical Hazardous Response Information System (CHRIS), Book 1</p> <p>[Source: SRS Annual (Defense Waste Processing Facility) Exercise 1995]</p>		

MEDICAL INFORMATION (SAMPLE 1)

CONTROLLER NOTES:

Provided below are the simulated conditions just prior to and during the medical injury:

As per work package no. DKM-73, the slurry pump motor replacement on Tank 51 continues.

Work has been ongoing now, for 18 hours. E&I has completed all electrical connections and two maintenance personnel remain on the tank top replacing equipment removed to gain access to the motor (i.e., rain cover, etc.). Without warning the VAMPS on Tanks 50 and 51 alarm and the two maintenance personnel initiate an immediate egress from the Tank Top. In the process one of the workers inadvertently steps between two pipes, jamming his left leg. His momentum prevents his breaking the fall and his body weight puts enough strain on the lower leg to cause a compound fracture. The coworker returns to give assistance, but the victim is in such pain he pleads not to be moved and asks that the coworker go for help.

Actual role player conditions:

Two (2) off-shift maintenance role players are briefed on the scenario are standing by at Tank 51. One is moulage for the left leg injury and has torn coveralls on. The victim is half sitting on the pavement between the tank edge and the monitor station, at the edge of the new hill. The injured individual is in position at 0748. Neither maintenance worker has any contamination and the worker who goes for help does not have any injury.

Provided on the following pages are the medical messages to be used to control the medical mini-scenario.

[Source: SRS Annual (In-Tank Precipitation) Exercise 1993]

MEDICAL INFORMATION (SAMPLE 2)

MESSAGE: MM-1

TO: Personnel at Tank 51 Aiding Injured Individual

FROM: Medical Controller

TIME: (Time victim is being examined initially)

NOTES: Provide survey readings to any HP who performs a survey of the injured individual as follows:

The individual is not contaminated. If the survey is conducted off the hill in a "background" area, provide "As Read" readings as appropriate.

If the individual is monitored on the hill, PRIOR TO 0810, the dose rate in the vicinity of the injured person is about 200 mR/hr. This will "peg" (off-scale high) any count rate meter used to monitor for contamination. Provide the appropriate exposure rate (if a Beta/Gamma instrument is used) based on the range of the instrument used.

If the individual is monitored on the hill, AFTER 0810, the dose rate in the vicinity of the injured person is about 50 mR/hr. This will "peg" (off-scale high) any count rate meter used to monitor for contamination. Provide the appropriate exposure rate (if a Beta/Gamma instrument is used) based on the range of the instrument used.

If the individual is monitored off the hill, provide the appropriate exposure rate (if a Beta/Gamma instrument is used) using the map on page 7.2.1-2, based on the location where the individual is being monitored and the range of the instrument used.

MESSAGE:

Victim is bleeding moderately from a broken bone protruding from the lower left leg just above the ankle. He is conscious and complains of severe pain.

Vital signs are as follows: (Provide those portions of this data that responders demonstrate the means to obtain.)

CONTROLLER ASSIGNMENTS (SAMPLE 1)

WSRC Exercise Manager	Tom L.		1239
WSRC Lead Evaluator	Sam W.		1629

INCIDENT AREA

Lead Controller	Ken B.	7-9279	1781
Command Post Lead	Sue H.	7-9295	1521
Control Net Radio	Jay P.	7-6610	1217
Control Net Telephone	Francis C.		

PROP SCENE SETUP/ACCIDENT SCENE DATA

Lead/Prop/Acc. Scene Controller	Steve M.	7-9265	1461
Prop Master/Accident Scene	Milt N.	7-9269	1983
Accident Scene Setup	Sam L.	7-9268	1916
Delivery/Support/Visitor Van	Clyde D.	7-6635	
Delivery/Setup/Victim Pickup	Robert B.	7-6635	
Delivery/Setup/Support	Earl G.	7-6635	

INCIDENT COMMAND POST

Offsite Med. Lead	Ed G.	7-9285	7474
Control Net Communicator	Roy M.	7-9292	1685
Helicopter Response	Hank S.	7-9289	1926
Aiken Regional Medical Center	Mike D.		
Aiken Regional Medical Center	Kevin L.	2-3131	
Human Resources Contact	Bud G.	7-6377	6534
Site Medical Lead	Barbara M.	5-1822	
Control Net Communicator	Kevin M.	7-9290	1015
Site Medical	Monica M.	5-2604	

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

CONTROLLER ASSIGNMENTS (SAMPLE 1) - CONTINUED**INCIDENT COMMAND POST**

Command Post Lead	Steve H.	7-9295	1521
Incident Commander	Greg P.	7-9052	5503
Security Lead	Danny B.	2-7360	
DEHEC Response	Bob B.		
HMRT / Fire Lead	Mike L.	5-6961	
HAZMAT/ER Team	Mark N.	5-6955	
EMS Lead	Joe C.	7-9945	
Extraction/Triage Officer	Mark R.	7-9945	
Treatment Officer	Gurney W.	5-1149	1388
Transportation	Brett D.	7-9259	
Coroner	Guy H.	5-4142	
Ambulance- Medic 1	Alan D.	7-3159	
Ambulance- Medic 2	Wayne D.	4-5720	
Ambulance- Medic 3	Karl L.	2-4524	
Mutual Aid Ambulance	Assigned Patient		
Mutual Aid Ambulance	Assigned Patient		
Mutual Aid Ambulance	Assigned Patient		
Mutual Aid Ambulance	Assigned Patient		
Helicopter EMS Team	Assigned Patient		

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

CONTROLLER ASSIGNMENTS (SAMPLE 2)

Exercise Directorate Control Cell (Idaho Falls)

Exercise Director	J. P.
Lead/DOE HQ Interface	B. W.
Technical/INEL Site	G. B.
Admin. office Interfaces	R. F.
Logistics + Timeline Coordinator	E. K. & S. W.
Administration & Logistics	C. S.
Non-Participating Organization Cell	F. B.
Safety Director	R. M.

INEL Site

Test Reactor Area

TRA Lead Controller	M. G.
ATR Simulator Lead Controller	D. S.
Simulator Operator Controller	K. E.
Simulator T/H Controller	D. B.
Simulator RAD Controller	D. B.
ATR Control Room Lead Controller	C. B.
Clone Shift Manager	V. B.
TRA ECC Lead Controller	F. J.
Command Team Controller	W. J.
ECC DRMS Controller	S. A.
ECC RDAS Controller	C. T.
Post Accident Monitor Controller	R. F.
OSC Teams Coordinator Control (Note 1)	J. G.
TRA Survey Controller (Note 5)	W. W.

ATR HP Office Lead Controller

* Repair Team #1 Control/Eval (Note 3)	R. S.
* Repair Team #2 Control/Eval (Note 3)	R. K.
* Repair Team #3 Control/Eval (Note 3)	A. J.
Contam/Injured Victims Control Note 4)	C. W.
	S. S.
	S. R.(moulaging assist)

[Source: INEL Performance Test Exercise 1995 "VARMINT"]

CONTROLLER ASSIGNMENTS (SAMPLE 2) CONTINUED

TRAS Security Gate Controller (Note 7)	C. M.
*Assem/Accnt/Evac Bus Cont/Eval (Note 8)	M. H.
TRA Site Survey Controller/Eval	D. N.
Contaminated Evacuee #1	G. T.
Contaminated Evacuee #2	R. M.
MTR Missing Personnel Actors (2)	T. F.
	C. C.

[Source: INEL Performance Test Exercise 1995 "VARMINT"]

CONTROLLER ASSIGNMENTS (SAMPLE 3)

Exercise controllers and their location/function assignments are listed below.

Location and Function	No. of Controllers	Name
Technical Support Center/EOC	1	M. G. ¹
Incident Command Post	2	C. K. ²
		R. S.
On-Scene Activities	2	D. C.
On-Scene Medical Activities	1	M.L.E.
Emergency Press Center	1	F. J.

¹ Lead Controller

² Lead On-Scene Controller

[Source: ANL-E Exercise 1994]

CONTROLLER ASSIGNMENTS (SAMPLE 3) - CONTINUED

Additional Participants

The location/function assignments of other participants are listed below.

Incident Command Post

Fermi Laboratory Observers

B. J.
R. S.
J. S.

Victims

T. H.
K. M.

Reporter (On-Scene)

Health Physics Player/Controller

AES

K. K.
G. M.
J. M.

Emergency Press Center

Fermi Laboratory Observers

C. C.
C. M.

Press

T. B.
J. F.
E. L.
M. M.
R. P.

General

Staging

F. J.
M. O.
R. S.

Safety Oversight

Video

Photography

G. D.
B. G.
T. W.

[Source: ANL-E Exercise 1994]

DETAILED CONTROLLER INSTRUCTIONS (SAMPLE 1)

HAZMAT LEAD CONTROLLER

Responsibilities

The HAZMAT Lead Controller is responsible for ensuring all radiological data being provided at the event scene is consistent with the data developed for the exercise package. Specific responsibilities include:

- a.a. Supervising event scene rad Controllers, as well as the Decon Controller.
- b.b. Providing radiological data in accordance with Section 9.3 when radiation contamination survey is performed and a rad Controller is unavailable.
- c.c. Notifying the Decontamination Controller/rad Controllers when actions taken by exercise Responders have resulted in the spread of contamination outside those locations identified on the event scene rad maps in Section 9.3.

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

DETAILED CONTROLLER INSTRUCTIONS (SAMPLE 2)

Scene Lead Controller Information/Instructions

This section describes the personnel, equipment, props, pre-staged equipment and locations to "set the scene" in support of the scenario described in Section 7.0 of this manual.

The Scene Lead Controller is responsible for managing all aspects of exercise scene safety, set up, event initiation, data issuance and controller coordination. The materials needed for initial set-up of the scene are as follows:

- A.1 - 27' van trailer (enclosed trailer).
- B.1 - Tractor (single or tandem axle).
- C.1 - Box truck
- D.1 - Site tour bus
- E.2 - Smoke generators.
- F.1 - gasoline operated electric generator.
- G.5 - Mouflage kits.
- H.32 - Injured victims, assorted injuries per scenario.
- I.10 - DOT placards (Dangerous and poison, 4 each on trailer - 1 each in tractor).
- J.1 - Water truck to fill assorted barrels at scene.
- K.2 - 100 foot extension cords.
- L.16 - 55 gal drums (filled with colored water) with assorted ruptures-leaks.
- M.2 - lb. broken glass (plastic or Plexiglas pieces).
- N.Drill signs for scene.
- O.Shipping papers package.
- P.Food coloring (yellow and brown)
- Q.Transportation Department Roadblock materials for the following initial locations:
 - 1 Road and 2 Road
 - 4 Road and F Road
 - D Road and 2 Road
 - Forestry HQ exit to 2 Road

Personnel required for initial set-up: 54

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

DETAILED CONTROLLER INSTRUCTIONS (SAMPLE 2) CONTINUED**A. Controllers/Support**

- 1 Scene Lead Controller.
- 6 Moulage Artists.
- 6 controllers for prop set-up.
- 4 Off-shift/duty WSI officers for prop barricade setup/manning.
- 4 WSI Roving Controllers.

B. Simulated injured individuals

- 1 - Box truck driver.
- 1 - Tractor trailer driver.
- 30 - Bus passengers. NOTE: Six Red (critical) victims must be helicopter crew certified and EMS qualified.

Night before:

- Perform final inventory of all prop equip. to be delivered to the scene on the morning of the exercise.
- Load empty drums in trailer.
- Load all props in support (chase) vehicle(s).

Moulage setup on exercise day: 0600 - 0850

Refer to Scenario Section 7.5 for specific, individual simulated victim conditions.

Begin/complete moulage of 32 victims.

Complete victim moulage NLT 0830

Victims report to accident scene NLT 0850

Final scene staging on exercise day: 0800 - 0855:

Set-up prop safety Road blocks at each of four designated locations.

Setup gasoline electric generators.

Fill barrels (drums) with water and food coloring (0840).

Move vehicles into final position per the attached drawing.

Spread glass (plastic) in intersection in roadway and near wrecked automobile.

Complete final victim moulage touch up/instructions.

Stage victims in and near vehicles.

Meet with WSI officer away from accident scene (Forestry HQ parking lot) and provide initial conditions briefing/scenario message.

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

DETAILED CONTROLLER INSTRUCTIONS (SAMPLE 2) CONTINUED

Initial scene prop roadblocks shall remain established until WSI or Transportation Dept. personnel are called to the scene, real-time, to setup actual road blocks per ERO direction. When WSI/CSWE arrive and are in place to control traffic, in essence completing a turnover, the scene prop roadblocks can be removed, with the approval of the Scene Lead Controller. It is assumed that the box truck and tractor trailer have impacted at the accident scene (F and 2 Road). The tractor driver is sitting outside the tractor on the ground near the rig. Most of the tour bus victims are inside the bus. The hazardous materials drums are leaking and the smoke generators are depicting the off-gas vapors in and near the trailer.

The WSI officer with controller arrive at the scene and the controller provides a limited amount of scene information to the player (per the appropriate messages in Section 7.1, which initiates the exercise.

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

NATIONAL MEDIA PROFILES (SAMPLE)

As a national media actor, you should be contacting all the primary Responders in development of your story. You should act as an actual reporter is expected to act. You wouldn't necessarily have all the appropriate telephone numbers, and you should develop that telephone list by asking DOE-HQ Public Affairs for the numbers. For each call, assume the appropriate profile and attempt to remain in character when portraying that individual. If any Responder requests a number where you can be reached, provide your Control Cell number, but ensure that the individual understands you will constantly be on the telephone and it would be better if you could call them back.

Profiles

1. You are John Story at the Washington Times, Washington Desk. You have been on the News Desk for just a short while and are still trying to prove yourself. You have been criticized for being too conservative in pursuing a news story and have been trying to change that. You smell a good story and want to get out in front. Your first calls (DOE-HQ PA, state, DOE-AL and LANL) should be made in an attempt to define the scope of the accident (what happened, what is the nature of the accident, any injuries, is radioactivity involved). Follow-on calls should be to obtain additional information on types of injuries, where patients were taken, how contamination is being handled, DOE assistance available to assist hospitals, what the state has available in resources to assist, and try and develop a human interest story. Use information gained from each of the calls to play off subsequent calls or go back to early calls for clarification or verification.
2. You are Bill Baggins from the National Tattle Tale. Your paper loves sensational news stories. You are aware that there has been a plane crash into a facility at LANL and you want to work the story line to include a disgruntled employee. Rather than ask specific questions, first begin the question with a statement (i.e., we understand that at least one victim in the plane was an employee who was recently fired from the LANL). Could this event be the result of an unhappy, disgruntled employee, or we understand that the wife of one of the plane's passengers worked at the facility where the plane crashed. Do you believe that the crash was intentional? The more far fetched the lead-in-the-better. Call and advance a theory; allow the media response people to respond; hang-up; and call back later with a new theory.

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

MASTER SCENARIO EVENTS LIST (SAMPLE 1)				
TIME	INJECT#	FROM	TO	SUBJECT
0800	1	All Controllers	Timeline Coordinator	Preposition of control
0815	2	All Controllers/ ETSC Controller	Onsite lead	Initial conditions
0830	3	IC/Rad/911/ Facility Controllers	Onsite lead	Start of the exercise
0835	4	911 Controller	Emergency Lead	Location of barricades
0840	5	Scene lead	Onsite lead	Move injured people to staging
0843		ETSC/Rad lead	Onsite lead	Use of Canned Meteorological conditions
0850	7	LANL CC Actors IC Controller	LANL CC Lead	Media calls to PA
	8C		Scene Lead	SAE Declaration
0900	10	Prop control	Scene lead	Fire out
	11	Employee Actor	LANL CC Lead	Potential contaminated employees
	12	LANL EOC Controller	EOC Lead Controller	Instructions on community alert sirens
[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]				

MASTER SCENARIO EVENTS LIST (SAMPLE 2)			
T (MIN.)	TIME	EVENT	MSG#
-25hrs	0800 9/12/5	Exercise Plant Conditions/Plant Status	001
-060	0715	WCC Alerting Message; Time Clock	002
		Maintenance Team Actors report for moulage	003
-045	0730	Simulator Crew Initial Conditions Briefing	004
-015	0800	Simulator in Run	005
		Exercise Actors pre-staged	006
		Security Patrol Officer Directed to Bldg. 670, NE corner	007
000:00	0815	Electrical Fault (fire/electrical explosion) in 4160 V Bus Tie/Feeder Disconnect. Commercial AC lost.	
		Security Patrol 402 reports fault to CAS 405; CAS 405 Notifies WCC; WCC notifies Fire Dispatch	008
		Field Survey (land) Crew deployed as transient population.	010.1
000:01	0815:01	Reactor Scram.	011C
000:15	0815:15	Enterprise Diesel Generator faults, Diesel Bus 670-E-3 loses power. DC Emergency Cooling Pump fails to start automatically.	013C
		RMS-1, 2, 3, and 4 actuation. Main stack exhaust damper BDM-1-5 fails to close.	0113.1C
[Source: INEL Performance Test Exercise 1995 "Varmint"]			

SUSPENSION/TERMINATION INSTRUCTIONS (SAMPLE)

The exercise is scheduled to begin at 8:00 a.m. Mountain Standard Time (MST) or 10:00 a.m. Eastern Standard Time (EST). No Responders should be pre-positioned, and response should be in accordance with established policies and procedures. The exercise is scheduled to run 6 hours with termination at 2:00 p.m. MST/4:00 p.m. EST. Each emergency response facility participating in the exercise should conduct a critique of their involvement immediately following the exercise. All controllers and evaluators are expected to take notes of items identified by the exercise Responders. If controllers or evaluators are asked for their impressions of how things went, specific issues or problems should not be discussed.

The exercise may be terminated by the exercise director when exercise objectives have either been demonstrated or given an adequate opportunity to be demonstrated. Following consultation with the lead controller and lead exercise evaluator, the exercise director will make the announcement concerning exercise termination.

If an actual emergency occurs, the exercise may be suspended or terminated at the discretion of DOE, State, Tribal, local, or DOE contractor authorities, depending on the nature of the incident.

If the exercise is suspended, the controllers will instruct the responders to safely stop in place. The conditions for restart of the exercise will be determined by the exercise director in consultation with the lead control personnel from the participating organizations. The controllers will be instructed on what conditions are to be set for restart.

[Source: INEL Performance Test Exercise 1995 “Varmint”]

EVALUATOR ASSIGNMENTS (SAMPLE 1)**DOE SENIOR EVALUATOR ORGANIZATION****INCIDENT AREA**

Lead Field Evaluator / CP	J. A. L.		
CP and Response Team	D. A. B.		
Enviro-Concerns - DHEC	W. C. W.		
CP and Response Team	S. W. D.		
Lead EMS	B. D. E.		
Scene Medical	D. M. D.		
Scene Medical	J. S. W.		
Aiken Regional Medical Center	S. G. S.		
Field Monitoring Teams	B. A. H.		
Area(s) Protective Actions	J. K. B.		

FIRE DEPARTMENT DISPATCH CENTER

Dispatch	J. R. F.		
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LAW ENFORCEMENT DISPATCH CENTER

LEDC Lead	S. S. J.		
Access Control Rover	L. M. S.		

SRS OPERATIONS CENTER

FACILITY	J. F. B.		
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EMERGENCY OPERATIONS CENTER

Site Level Facility Lead	C. E.		
WSI	E. S. D.		

EMERGENCY OPERATIONS FACILITY

Lead	L. A. H.		
Facility	A. S. M.		

[Source: SRS Annual (HAZMAT Transportation) Exercise 1994]

EVALUATOR ASSIGNMENTS (SAMPLE 2)

Exercise Directorate Control Cell (Idaho Falls)

Exercise Director	J. P.
Lead/DOE HQ Interface	G. B.
Admin. office Interfaces	R. F.
Logistics + Timeline Coordinator	B. K. & S. W.
Administration & Logistics	C. S.
Non-Participating Organization Cell	F. B.
Safety Director	R. M.

INEL Site

Test Reactor Area

TRA Lead Controller	M. G.
ATR Simulator Lead Controller	D. S.
Simulator Operator Controller	K. E.
Simulator T/H Controller	D. B.
Simulator RAD Controller	D. B.
ATR Control Room Lead Controller	C. B.
Clone Shift Manager	V. B.
TRA ECC Lead Controller	F. J.
Command Team Controller	W. J.
ECC DRMS Controller	S. A.
ECC RDAS Controller	C. T.
Post Accident Monitor Controller	R. F.
OSC Teams Coordinator Control (Note 1)	J. G.
TRA Survey Controller (Note 5)	W. W.

ATR HP Office Lead Controller

* Repair Team #1 Control/Eval (Note 3)	R. S.
* Repair Team #2 Control/Eval (Note 3)	R. K.
* Repair Team #3 Control/Eval (Note 3)	A. J.
* Repair Team #3 Control/Eval (Note 3)	C. W.
Contam/Injured Victims Control Note 4)	S. S. & S. R. (moulaging assist)
Cont/Inj Victim Actors (2 persons+dummy)	J. K.(Lead)

R. C.

Plant RAD Instrument Data Controller

*In-plant Survey Controller/Eval	F. J.
On-Scene Comm+Fire/Elect Cont (Note 6)	K. W.
Security Guard Actor (Fire Report)	M. H.
TRAS Security Gate Controller (Note 7)	[On-shift Guard]
	C. M.

EVALUATOR ASSIGNMENTS (SAMPLE 3)

The exercise evaluators and their location/function assignments are listed below. All evaluators are members of the ANL-E staff.

Location and Function	No. of Evaluators	Name
Technical Support Center/EOC	2	T. B. W. K.
Incident Command Post	1	M. M.
On-Scene Activities	1	D. B.
On-Scene Medical Activities	1	J. M.
Emergency Press Center	1	B. G.

[Source: ANL-E Exercise 1994]

EVALUATION CRITERIA CHECKLIST (SAMPLE 1)**F15 INCIDENT COMMAND GROUP EVALUATION CRITERIA**

OBJECTIVE: Assemble, equip, brief, dispatch, and track offsite monitoring teams.

REFERENCE: LANL Emergency Management Plan
ERPIP 520 HAZMAT Group Supervisor
Memorandum of Understanding between the County of Los Alamos and the
Department of Energy 3/22/93.

1. Los Alamos County or the New Mexico Department of Public Safety MOUs are implemented by request of the County PD Shift Commander, County FD Shift Commander, County FD Incident Commander, LANL Duty Emergency Manager, or the NM Department of Public Safety.
2. Monitoring teams are equipped then assembled in the Staging Area or other area determined by the HAZMAT Group Supervisor.
3. Monitoring teams are briefed and then dispatched. Are their locations plotted on the Incident Commander's status board?
4. Monitoring data and information are transmitted to the HAZMAT Group Supervisor.
5. HAZMAT Group Supervisor evaluates and assesses the information and then sends it to the Incident Control Group and the Emergency Technical Support Center.

MET: _____ NOT MET: _____ NOT OBSERVED _____

JUSTIFICATION:

[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]

EVALUATION CRITERIA CHECKLIST (SAMPLE 2)

Incident Command Location

This encompasses all EOS and ECR locations, the local command station for remote onsite (e.g., transportation accidents, airplane crash sites, etc.) and would be staffed, depending on the nature of the incident, by the AEC, FEC, Control Room staff, Fire Chief, Industrial Hygienist, Security Zone Captain, HAZMAT Team Captain, etc. }

ICL-1 Objective: Demonstrate that an ERO, with clearly specified authorities and responsibilities for emergency response and mitigation, is established and maintained for each facility. The ERO has overall responsibility for the initial and ongoing response to, and mitigation of, an emergency. (DOE 5500.3A, 11.c.(1), DOE EMG-EXEC, A, EMER. RESPONSE ORG.,12-11-91).

ICL-1-1 Demonstrate a single individual is in charge of the overall response and as the authority to use necessary resources to mitigate the emergency. (DOE EMG EXEC, ERO, A.1, 12-11-91)

Lines of Inquiry:

ICL-1-1-A Review the applicable responsibilities section of the 6Q, General Site or Facility/Area Annex, applicable Emergency Plan Implementing Procedure or response procedures. (The actual plan section and procedure numbers should be listed here based on the incident location and the emergency scenario).

ICL-1-1-B Monitor the Incident Command location.

ICL-1-1-1 Verify the Incident Commander has the authority to use necessary local resources to mitigate the emergency.

ICL-1-1-2 Verify the Incident Commander assumes control of the incident scene location in accordance with the applicable procedures.

ICL-1-1-3 Verify the Incident Commander

EVALUATION MODULE (SAMPLE)**Exercise Evaluation Criteria**

R.1 *Given notification of the operational emergency, activate and staff the City EOC in accordance with EOC Procedures.*

Reference: *The State of Tennessee Multi-Jurisdictional Emergency Response Plan with the United States Department of Energy Oak Ridge K-25 Site and Procedure ____.*

Evaluation Criteria**H.1.** Staffing and Activation of Emergency Facilities and Teams Criteria

H.1.1. The emergency facilities and teams are staffed with emergency response personnel (designated by name, title, or position) in accordance with the approved emergency plan.

H.1.2. The ERO is functionally staffed to address the occurrence in a timely manner, as outlined in the approved emergency plan. Key emergency facilities, should be staffed within an hour after declaration of an emergency.

H.1.3. Procedures and/or checklists which describe the major activation and response activities of key members of the ERO are used.

H.1.4. Emergency response staff demonstrate knowledge of the tasks they are expected to perform.

H.1.5. Provisions are made for extended operations (i.e., shift arrangements to cover 24-hour operations).

H.1.6. Emergency facility and team activation meet requirements of the approved emergency plan(s).

H.1.7. Minimum required staffing (as documented in approved plans and procedures) is available and assumes responsibilities for emergency response functions prior to emergency facilities and teams being declared activated.

H.1.8. A method (e.g., status board and badges) for tracking presence of key members of the ERO is pre-established and followed.

[Source: Oak Ridge K-25 Site Full Participation Exercise Volunteer Response 1995]

EVALUATION MODULE (SAMPLE-CONTINUED)

1. Did the 24-hour notification point receive notification of the event and activate the ERO ?
[Criteria H.1.2] YES NO Not Obs
Time call-up began: _____
2. Was the EOC available and ready for use? [Criteria J.1] YES NO Not Obs
3. Did the EOC have the functional equipment and materials to support the Cadre's activities?
[Criteria J.2] YES NO Not Obs
4. Did the EOC Cadre log in as they arrived? [Criteria H.1.8] YES NO Not Obs
5. Were responding EOC Cadre members assigned to positions by name? [Criteria H.1.1] YES NO Not Obs
6. Did the EOC Cadre members use their procedures or checklists during activation?
[Criteria H.1.3] YES NO Not Obs
7. Did EOC Cadre members assume responsibilities for emergency response functions prior to the EOC
being declared operational? [Criteria H.1.7] YES NO Not Obs
8. Were the EOC Cadre members knowledgeable of their activation functions? [Criteria H.1.4] YES NO Not Obs
9. Did the Crisis Manager brief the EOC Cadre on the status of the event prior to declaring the EOC
operational? [Criteria H.2.2] YES NO Not Obs
10. Was command formally transferred to the EOC Crisis Manager? [Criteria A.6] YES NO Not Obs
11. Was the EOC functionally staffed and declared operational within one-half hour?
[Criteria H.1.2] YES NO Not Obs

[Source: Oak Ridge K-25 Site Full Participation Exercise Volunteer Response 1995]

EVALUATION MODULE (SAMPLE-CONTINUED)

12. Did the activation meet the requirements of the Oak Ridge Disaster Preparedness Plan?

[Criteria H.1.6]

YES NO Not Obs

Time EOC declared operational: _____

13. Were 24-hour operations considered? **[Criteria H.1.5]**

YES NO Not Obs

Objective #1: Given notification of the operational emergency, activate and staff the City EOC in accordance with EOC Procedures.

The exercise objective was:

- ☐ Met with Superior Performance
- ☐ Met
- ☐ Met with Improvement Items
- ☐ Met but with weaknesses
- ☐ Not Met (Deficiency)

Comments:

[Source: Oak Ridge K-25 Site Full Participation Exercise Volunteer Response 1995]

APPENDIX B

GENERIC SAFETY PLAN

B.1 Introduction

This appendix provides an example of a Safety Plan for an emergency management system exercise. The example is generic and is incomplete in that necessary site/facility-specific information is *not* included. It provides a recommended preliminary draft for an exercise-specific Safety Plan.

B.2 Example Safety Plan

B.2.1. Scope

This Exercise Safety Plan has been included in the exercise package so that exercise controllers and evaluators will be able to anticipate and recognize unplanned events that could result in personal injury or unforeseen property damage. It enables exercise participants to be governed by the safety guidelines established for the exercise.

No attempt has been made to duplicate safety issues detailed in other portions of the exercise package. Applicable sections of the exercise package are referenced, and specific issues are detailed there. Protocol for termination of the exercise is included in the Control section of the exercise package.

B.2.2 Pre-exercise Safety Requirements

The pre-exercise controller/evaluator training will address the content of this plan to assure adequate understanding of safety by all controllers and evaluators.

A pre-exercise announcement will be made by (specify position) over the (radio network or frequency) to all site locations. Participating offsite agencies will be notified by a message faxed to designated locations.

Controllers will be staged before the exercise is scheduled to begin and will ensure that there are no pre-existing safety concerns which would affect the start of the exercise. Controller assignments and locations are identified in the Control section of the exercise package. The senior controller will obtain a safety check from all lead controllers prior to beginning the exercise.

B.2.3 Exercise Activity Boundaries and Off-Limit Areas

The exercise boundaries are defined by the boundaries of the (site/facilities) involved in the exercise. Specific exercise boundaries are discussed and depicted on maps in the exercise package. Safety concerns that arise during the exercise will be dealt with immediately by exercise controllers in the affected area. As exercise objectives are accomplished certain areas may be allowed to return to normal activities.

B.2.4 Safety Equipment

Note: This section should identify exercise-specific safety equipment.

Exercise participants are required to follow all existing safety guidelines for the use of protective equipment in designated areas. The following equipment, marked with an X, is applicable to this exercise.

- ☐ Controller communications (specify) - for controllers' use.
- ☐ Exercise identification armbands/vests/caps (specify).
- ☐ Illumination devices (specify).
- ☐ First aid kit [occupational medicine aid stations available onsite - ambulance will be available at the event scene].
- ☐ Water cooler [water will be available at the event scene(s)].
- ☐ Field teams will be directed to carry water.
- ☐ A rover will be assigned to provide water to personnel at field locations.
- ☐ Personnel comfort (specify).
- ☐ Fire extinguisher - an extinguisher will be provided for smoke generation devices.
- ☐ Safety harness/lifeline (specify).
- ☐ Eye/hearing protective devices (specify).

- ___ Gloves (specify).
- ___ Field teams should don gloves as necessary to obtain samples.
- ___ Hard hats.
- ___ Protective clothing (specify) _____.
- ___ Approved spark arresters - see fire extinguisher.
- ___ Miscellaneous hand tools (specify) _____.
- ___ Other (specify) _____.

B.2.5 Site-Specific Safety Hazards

Outside Hazards

Exercise participants are required to follow all hazard postings in exercise areas.

Exercise participants must obey all traffic laws during the exercise. Response personnel will use emergency lights and sirens on site but lights and sirens will be turned off once they leave the boundaries of the facility being exercised.

Field teams will travel on designated roads and trails. Field team vehicles will be equipped with fire extinguishers and shovels. No vehicles will go off road. Wildlife such as snakes and insects may be encountered.

In the event of electrical storms, high winds, or other severe weather, participants will follow controller's instructions.

Controllers and responders will watch all participants for symptoms of heat stress. Controllers will ensure that all emergency response personnel are allowed the opportunity to rehab whenever necessary. Controllers are to halt exercise play anytime a responder appears to be in distress.

The following outside hazards, marked with an X, are applicable.

- ☐ Traffic. Field teams need to be aware of road condition hazards and traffic, especially when stopping to survey.
- ☐ Terrain. Field teams may be required to use unpaved roadways to survey. Each vehicle will be equipped with fire extinguisher, a shovel and bucket, and communication capabilities.
- ☐ Overhead obstructions.
- ☐ Electrical storms - see other.
- ☐ Heat stress - see other.
- ☐ Cold stress (hypothermia).
- ☐ High winds - see other.
- ☐ Visibility conditions - see other.
- ☐ Other. Weather conditions as they relate to actual conditions, will be discussed with participants before the exercise begins or when they arrive at their assigned location.

Inside Hazards

Exercise participants will follow facility lock and tag procedures when working on any energized systems. Participants will be instructed to use caution in the areas where equipment is in operation. Exercise participants will not enter any confined spaces during the exercise.

The following items, marked with an X, pose potential inside hazards.

- ☐ Electrical hazards.
- ☐ Mechanical equipment/machinery.
- ☐ Hazardous material storage/use areas.
- ☐ Fuel loading concerns.

☐ Thermal hazards.

☐ Tripping hazards. Participants should be aware of potential tripping hazards, especially around the event scene area.

☐ Confined spaces.

☐ Elevated locations.

Hazardous Materials

Exercise participants must have appropriate training to enter hazardous materials areas and will follow existing facility procedures for hazard control. The following items, marked with an X, are necessary to prevent a potential non-radiological hazard during this exercise.

☐ Participants have had appropriate hazardous materials training.

☐ TSD or RCRA permitted locations are identified in the Precautions/ Limitations and Scenario sections of the exercise package.

B.2.6 Radiation Safety Provisions

All radiation alarms will be treated as real alarms. No radiation alarms will be initiated as part of the exercise. All personnel will follow existing radiation control procedures and must have received the training necessary to allow them to enter any control area(s) included as part of the exercise. All personnel will wear appropriate dosimetry at all times. Radiation control procedures will be followed and personnel will be required to monitor for radiation whenever they leave a controlled area.

The following items, marked with an X, are necessary to prevent a potential hazard to radiation safety during this exercise.

☐ Notifications/approvals are required prior to activation of any radiation alarm.

☐ Personnel participating in the exercise have been briefed or trained as required on any radiological hazards.

☐ Participants have had the appropriate Radiation Worker Training.

___ Personnel entering radiation or radiological controlled areas possess the appropriate protective equipment and dosimetry.

B.2.7 Personnel Assignments

Note: This section should detail any special personnel assignments and functions related to safety measures.

All safety concerns will be brought to the attention of the exercise Safety Director through the exercise control organization. Personnel specifically exempted from exercise play will follow their normal facility procedures.

The Controller Organization section of the exercise package identifies personnel assignments. No changes will be made to controller assignments without prior assurance that any replacements have equal or greater understanding of safety concerns that could be encountered at the location to which they are assigned.

B.2.8 Participation by Offsite Agencies

Offsite agencies participating in this exercise have been identified in the Scope section of the exercise package. Since the safety of personnel from offsite agencies is primarily the individuals' responsibility shared by the controller for the participating agency, offsite personnel responding to the onsite exercise will follow the instructions and requirements of this exercise safety plan. Safety concerns offsite are to be communicated immediately to the Exercise Safety Director and the lead offsite controller.

Offsite agencies that are not participating will be notified that an exercise is taking place which will not require their participation.

B.2.9 Personnel Safety Provisions

Specific incidents and materials that may have adverse physical effects on personnel have been addressed in specific sections of the exercise package. Medical data, environmental applications, and hazardous activities of the exercise are also addressed in pertinent sections of the exercise package. Every effort has been made to anticipate and minimize hazardous situations inherent in this exercise. The following provisions, marked with an X, apply to this exercise.

___ Individual exercise participants are personally responsible for their individual safety.

- ☐ Each participant must monitor his/her own physical condition for signs of overexertion or distress.
- ☐ Any participant who observes another person injured or otherwise in need of assistance will immediately cease exercise activities and render aid/call for assistance.
- ☐ All injuries, no matter how slight, must be immediately reported to the nearest controller.
- ☐ All ascents to or descents from elevated positions will be by ladder, stairway, or other safe method. Jumping from elevated positions will not be allowed.
- ☐ All visitors and observers must remain in their designated locations throughout the exercise.
- ☐ Controller personnel are familiar with the hazards of the equipment involved and the required safety measures.

Will environmental conditions (extreme heat, cold, ice/snow, confined space, oxygen deficiency, etc.) affect the safety of participants?

☐ Yes ☐ No

If there is a concern that prevailing environmental conditions may impact personnel safety, an assessment will be made immediately preceding the exercise and safety concurrence obtained to conduct of the exercise?

☐ Yes ☐ No

Will controller personnel operate or handle any equipment other than radios, pagers, or tape recorders?

☐ Yes ☐ No

If yes, specify (e.g., smoke-generating machine, lifting drums) and identify special safety provisions. _____

B.2.10 Vehicle Safety Provisions

The following vehicle safety precautions apply to this and all EMS exercises at DOE facilities.

- ☐ No vehicle will be driven in such a manner that posted speed limits are exceeded or safe driving rules are violated.
- ☐ Only those vehicles involved in the exercise will be used for movement.
- ☐ Vehicles may not be mounted or dismounted until they come to a full stop.
- ☐ Care should be taken when operating a vehicle in reverse.
- ☐ There will be no attempt to use a vehicle to crash, block, or in any way endanger another vehicle or individual.
- ☐ Any roadblock(s) will be simulated by placing a blocking vehicle(s) on the shoulder of the road and notifying a controller that a roadblock has been established.
- ☐ All accelerations, decelerations, cruising, turns, etc., will be accomplished in a safe manner.
- ☐ All personnel in moving vehicles will wear seat belts if the vehicle is equipped with them.

B.2.11 Exercise Safety and Control Organization

The Exercise Director is the senior safety officer for the exercise. The Exercise Safety Director answers directly to the Exercise Director and will ensure that all activities are conducted in accordance with this safety plan. The Exercise Safety Director may appoint an exercise safety officer.

The Exercise Safety Director is responsible for the following.

- ☐ Ensuring that a risk assessment has been prepared and approved for the exercise or scenario.
- ☐ Ensuring that site- and facility-specific safety briefings are conducted for all participants.

___ Verifying that a safety survey of the exercise areas is/are conducted immediately before the exercise to verify that:

- ___ all hazard and off-limit areas are clearly marked and
- ___ the area(s) is/are ready to commence exercise play safely.

___ Ensuring that exercise activities are halted in the event of an actual emergency.

The fire department exercise working group member is responsible for identifying manpower requirements for the exercise to ensure that site fire safety is not degraded.

All controllers are designated as assistant exercise safety officers. Any controller who observes any unsafe act or condition will immediately correct the situation or halt the exercise until it is corrected. Controllers are responsible for the following.

- ___ Attending site/facility-specific exercise safety briefings.
- ___ Conducting a safety survey of the exercise area and clearly marking hazardous and off-limits areas before the exercise.
- ___ Performing safety checks of their areas and of the exercise participants to whom they are assigned, and report the results to their lead controllers prior to the start of the exercise.
- ___ Ensuring that all personnel comply with the provisions of this safety plan and with common-sense safety precautions.
- ___ Halting exercise play any time that an uncorrectable safety hazard becomes evident.
- ___ Ensuring that communications during the exercise are preceded with the announcement "THIS IS AN EXERCISE."
- ___ Notifying emergency medical services and fire protection if they are needed for an actual emergency in the exercise area.
- ___ Notifying facility personnel if there is a real emergency in the exercise area.
- ___ Notifying fire and/or protective force dispatchers if an alarm is to be activated.

The EOC controller will ensure that an in-progress exercise message is broadcasted over radio nets every 15 minutes during the exercise.

B.2.12 Special Environmental Concerns

Will any exercise activities cause environmental concerns?

___Yes ___No

If yes describe the concerns in detail and list required approval authorities prior to proceeding with that activity.

Environmental Concern	Approval Authority	Date
_____	_____	_____
_____	_____	_____

B.2.13 Approval

Upon completion and approval this Safety Plan should be incorporated into the Limitations section of the exercise package.

DEVELOPED: _____ DATE: _____
Exercise Safety Officer

REVIEWED BY: _____ DATE: _____
Site Fire Department Rep.

REVIEWED BY: _____ DATE: _____
Offsite Fire/Medical Rep.

APPROVED BY: _____ DATE: _____
Exercise Director

APPENDIX C

GENERIC SECURITY PLAN

C.1 Introduction

This appendix provides an example of a Security Plan for an emergency management system exercise. The example is generic and is incomplete in that necessary site/facility-specific information is *not* included. It provides a recommended preliminary draft for an exercise-specific Security Plan.

C.2 Example Security Plan

C.2.1. Scope

This security plan is prepared for the purpose of providing a “same message” approach to security issues concerning this exercise. It is included in the exercise package so that participants are better able to anticipate and recognize unplanned events which may result in degradation of site security. It enables personnel to respond appropriately to and understand the security guidelines of the exercise.

No attempt has been made to duplicate security issues detailed in other portions of the exercise package. Applicable sections of the exercise package are referenced and specific issues are detailed there.

C.2.2 Pre-exercise Security Requirements

A pre-exercise briefing will be provided to security participants on the scope and limitations of this exercise. Security personnel will be provided a briefing by the appropriate Command Officer.

The pre-exercise controller training will address security parameters to ensure adequate understanding by all controllers.

A controller will be located at applicable alarm stations and the local police department (as applicable to the scenario) dispatch centers before the exercise begins.

The pre-exercise participant training will address security parameters to ensure adequate understanding by all other participants.

C.2.3 Exercise Activity Boundaries and off Limit Areas

The (site/facility) protective force shall adhere to activity boundaries and off -limit areas as listed in the Exercise Safety Plan.

Personnel shall, in accordance with (site/facility) security procedures, properly secure/handle classified material/documents prior to taking any action in response to exercise conditions.

Personnel shall *not* “crash” any security doors or perimeters except in the event of an actual emergency.

C.2.4 Personnel Assignments

Note: This section should detail any necessary clarification of special personnel assignments and functions related to security measures.

The Controller Organization section of the exercise package identifies personnel assignments. No changes shall be made without assurances that personnel qualifications and notifications are equal to circumstances prior to the changes.

C.2.5 Participation by Offsite Law Enforcement Agencies

Note: This section should identify offsite law enforcement agencies who will be involved in the exercise and their level of participation.

Law enforcement agencies will participate in the exercise:

☐ Yes

☐ No

If yes, identify extent of participation and address the following.

- Personnel to simulate access control points in the community.
- Interface and coordination with law enforcement activities at the (site/facility) incident command and (site/facility) EOC.
- Communication of information through the police department dispatch office.

- Local law enforcement agencies responses to be simulated.
- Information on required protective forces/local law enforcement agencies responses potentially impacting the exercise communicated to the Exercise Director via the (site or facility) CAS Controller?

C.2.6. Security Provisions

- An Exercise Safety Plan has been developed detailing required safety provisions related to security for the exercise.
- Exercise Participants will be provided a security briefing prior to the start of the exercise.
- The Exercise Director has the authority to place the exercise into an administrative hold or exercise freeze for any security reason.
- Use of actual 911 *or* an administrative number in lieu of 911 is specified and included in briefings.
- Other provisions. (*Identify applicable site/facility-specific items*)

C.2.7 Special Security Provisions

- Event scene security boundaries - *Protective force/police department will staff any/all event scene access control points as they normally would during an actual event.*
- Shadow force - *Protective force position(s) and location(s) to be staffed with shadow force and personnel identified by wearing an armband with the word "Security" printed on it.*
- Security gate access - *Security officers/security police officers/guards will staff all required gates.*
- Metal/SNM Detectors - *Provisions, if applicable, for by-pass of these devices.*
- Miles Laser Gear - *Provisions, if applicable.*

- Firearms - *Fire arms will remain holstered at all times.*
- Classified Material/Documents potentially impacted - Classified materials/documents shall not be left unattended. All material is to be properly stored and classified vaults/storage cabinets secured prior to the start of the exercise.
- Required Security Notifications - *Identify special provisions.*

C.28 Other Security Provisions

Note: This section should detail any additional clarification of security measures not addressed in above paragraphs.

- Other (site/facility)/local law enforcement responses required and to where they report?
- Required overtime provisions addressed and appropriate approvals obtained?

C.29 Approval

PREPARED BY: _____ Security Rep.	DATE: _____
REVIEWED BY: _____ Police Department Rep.	DATE: _____
APPROVED BY: _____ DOE Security Rep.	DATE: _____
APPROVED BY: _____ Exercise Director	DATE: _____

APPENDIX D

GENERIC MEDIA PLAN

D.1 Introduction

This appendix provides an example of a Media Plan for an emergency management system exercise. The example is generic and is incomplete in that necessary site/facility-specific information is *not* included. It provides a recommended preliminary draft for an exercise-specific plan.

D.2 Example Media Plan

D.2.1 Scope

This plan establishes the framework for a coordinated, efficient media relations in support of the (specify) exercise to be conducted at the (site/ facility). The plan provides the methods, techniques and assignments/ responsibilities for ensuring:

- Broadened public/media understanding and acceptance.
- Increased (site/facility) employee support/participation.
- Reduced uncertainty.
- Minimized liabilities.
- Enhanced coordination and operating relationships.

The success of this plan will result in the realization that the (site)/ DOE interests are the same as those of its various audiences in the area of emergency management.

D.2.2 Objectives

- Ensure that the public and media are aware of the planned exercise and that no unwarranted concerns are generated as a result of the exercise planning and/or conduct.
- Provide the public and media with an understanding of DOE and DOE contractor commitment to ensuring public health and safety through development of a comprehensive emergency management system.

- Coordinate with state, local, tribal and various Federal agency authorities in reaching out to potentially affected populations concerning the development and conduct of DOE emergency management exercises.
- Provide the local media an opportunity to observe and report on the activities leading up to and during conduct of DOE emergency management exercises.

D.2.3 Audiences

Note: This section should indicate what specific groups are the audience for the Media Plan.

- General public located in the geographic area of the exercise.
- Community leaders and decision makers within those areas that will potentially be impacted by the exercise scenario including those leaders who would have reason to comment publicly on an emergency event at the site.
- Site and DOE employees.
- Print and broadcast media in local area including newspapers, local TV and cable stations, and local radio stations.
- Nonparticipating offsite response groups.

D.2.4 Messages

Note: This section should identify information the audience should know.

- A major emergency exercise is planned for the (site name) on (date of exercise) that will test and evaluate regional emergency plans and responses.
- Emergency exercises are conducted to evaluate a facility/site emergency management system. Exercises are also used to enhance communications between agencies and practice their policies, notifications, and procedures in cooperation with DOE and (site name) procedures. In the event of an actual emergency, officials will, in turn, be better prepared to handle public health and safety issues.

- Emergency exercises are an important responsibility of government at all levels. Therefore, this emergency exercise will involve state, local, and tribal agencies and other offsite organizations to ensure that all affected communities receive proper notifications and promoting the highest level of public and employee health and safety.
- Participants in exercises may include the DOE, including headquarters and local offices, site EROs, state, local, and tribal emergency organizations including police, fire, and hospital, county decision makers, and other agencies responsible for public safety and emergency response.
- Exercises demonstrate and test complex integration and coordination of information and resources between governmental agencies at both the Federal and state levels, as well as community agencies, site employees and the general public.

D.2.5 Strategic Actions

Note: This section should identify the actions to be taken to get the messages to the audiences.

- Reach target audiences, with messages in Section 4 above.
- Identify a team of DOE, contractor, and community officials to disseminate information by:
 - briefing local elected and tribal leaders;
 - developing a fact sheet for public dissemination;
 - providing media opportunities for reports; and
 - providing information to other Federal and state agencies for widest dissemination.
- Produce and distribute a media kit specifically designed to be used prior to and during the exercise.
- Produce and distribute Public Service Announcements (PSAs) to run on local TV, cable, and radio stations.

D.2.6 Products and Scheduling

Note: This section should indicate what needs to be produced or assembled and the associated timetable.

- Identify audiences and interested parties. (target date)
- Identify a team of DOE, contractor, state, local, and tribal officials and spokespersons to participate in the exercise development process. (target date)
- Schedule meetings, presentations, and briefings. (target date)
- Produce a media kit to include the following. (target date)
 - Press releases.
 - Background material/information and acronym list.
 - Hazardous materials background materials.
 - Still photographs.
 - Maps.
 - News/informational articles on emergency preparedness at the site.
 - Media kit folder.
- Distribute media kits to identified media. (target date)
- Produce and distribute PSAs as follows.
 - Produce radio PSAs. (target date)
 - Produce video PSAs. (target date)
 - Distribute radio and video PSAs. (target date)
 - Write articles to appear in site employee newsletters. (target date)

D.2.7 Approval

DEVELOPED BY: _____ DATE: _____
Exercise Planner

REVIEWED BY: _____ DATE: _____
Site Public Information Officer

APPROVED BY: _____ DATE: _____
Exercise Director

APPENDIX E

GENERIC ADMINISTRATION/LOGISTICS PLAN

E.1 Introduction

This appendix provides an example of an Administration/Logistics Plan for an Emergency Management System exercise. The example is generic and is incomplete in that necessary site/facility-specific information is *not* included. It provides a recommended preliminary draft for an exercise-specific plan.

E.2 Example Administration/Logistics Plan

E.2.1 Scope

This plan is prepared for the purpose of ensuring the requisite administrative and logistics activities associated with the exercise planning, preparations, conduct, and followup are accomplished. It consists of a series of checklists for use by the exercise planning organization.

E.2.2 Exercise Package Development, Production, Distribution

- **Development.** The following sections have been approved by the exercise development organization.

Completion Date

	Scheduled	Actual
<input type="checkbox"/> Scope		
<input type="checkbox"/> Objectives		
<input type="checkbox"/> Scenario narrative		
<input type="checkbox"/> Design and development guidelines		
<input type="checkbox"/> Safety Plan		
<input type="checkbox"/> Security Plan		
<input type="checkbox"/> Media Plan		
<input type="checkbox"/> Timeline of key exercise events		
<input type="checkbox"/> MSEL		
<input type="checkbox"/> Message injects		
<input type="checkbox"/> Exercise data		
<input type="checkbox"/> Exercise control		
<input type="checkbox"/> Exercise evaluation		
<input type="checkbox"/> Administration and logistical planning		
<input type="checkbox"/> Glossary of acronyms		

- **Production and Distribution**

Completion Date		
	Scheduled	Actual
<input type="checkbox"/> Authorized Derivative Classifier		
<input type="checkbox"/> Technical writing review		
<input type="checkbox"/> Produce final draft		
<input type="checkbox"/> Develop concurrence distribution list		
<input type="checkbox"/> Distribution of draft		
<input type="checkbox"/> Concurrence by participating organizations (list each for check-off purposes)		
<input type="checkbox"/> Insert final comments		
<input type="checkbox"/> Authorized Derivative Classifier (if required)		
<input type="checkbox"/> Develop distribution list		
<input type="checkbox"/> Produce exercise package		
<input type="checkbox"/> Controlled distribution		

E.2.3 Safety Admin/Logistics Checklist

Note: This list should correlate with the Safety Plan.

- ☐ Safety Officer and organization assigned (from Safety Plan)
- ☐ Safety equipment and materials identified (from Safety Plan)
- ☐ Safety equipment and materials procured
- ☐ Medical resources scheduled
- ☐ Medical resources briefed

E.2.4 Security Administration/Logistics Checklist

Note: This list should correlate with the Security Plan.

- ☐ Clearance transfer complete
- ☐ Badging complete
- ☐ Escorts identified, contacted, and briefed
- ☐ Security shadow force requirement identified (from Security Plan)
- ☐ Security shadow force identified and briefed
- ☐ Weapons policy published (from Security Plan)

E.2.5 Media Checklist

Note: This check list is required if the exercise will generate off-site interest. The administrative and logistics requirements should correlate with the Media Plan.

- ☐ Video/audio
- ☐ Press badges
- ☐ Validate phone numbers for media calls
- ☐ Coordinate actual media attendance
- ☐ Press release announcing exercise
- ☐ Develop and publish viewing itinerary

E.2.6 Meeting Checklist

This checklist should be used for each pre- and post exercise planning and evaluation meeting.

- ☐ Scheduled date and time: _____
- ☐ Number of attendees: _____
- ☐ Meeting purpose or function: _____
- ☐ Schedule facility
- ☐ Schedule audio/visual equipment
- ☐ Develop agenda
- ☐ Publish and distribute announcement
- ☐ Arrange for food/drinks
- ☐ Produce handouts or other support materials
- ☐ Arrange for recorder for taking minutes
- ☐ Ensure facility setup
- ☐ Produce sign-in sheet
- ☐ Produce draft of minutes
- ☐ Finalize and distribute minutes

E.2.7 Training Session Checklist

Note: The pre-exercise training sessions normally include responder briefings, generic and exercise specific evaluator and controller training, and observer briefings.

- ☐ Scheduled date(s) and time(s): _____
- ☐ Number of students: _____
- ☐ Training course or class name: _____
- ☐ Schedule facility
- ☐ Identify travel, transportation, and room requirements for out-of-town students
- ☐ Schedule audio/visual equipment
- ☐ Develop schedule
- ☐ Publish and distribute announcement
- ☐ Arrange for food/drinks
- ☐ Sign-in sheet
- ☐ Produce handouts or other support materials
- ☐ Ensure setup of facility
- ☐ Arrange for support during conduct of the class
- ☐ Publish class roster
- ☐ Issue completion certificates

E.2.8 Pre-Exercise Logistics/Simulations Checklist

- ☐ Participant meals ordered and pre-staged
- ☐ Meal distribution plan developed
- ☐ Pre-exercise meeting schedule published
- ☐ Pre-exercise meetings (use meeting checklist)
- ☐ Procure transportation to evaluator, controller, and observer locations
- ☐ Special weather equipment pre-staged (if checked, reference Safety Plan)
- ☐ Control cell setup
- ☐ Radio frequencies are confirmed
- ☐ Control communications directory published
- ☐ Control communications equipment pre-staged and tested
- ☐ Spare radio batteries are pre-staged
- ☐ Evaluator, controller, observer, and exempt personnel vests or identification means pre-staged
- ☐ Medical support pre-staged
- ☐ Restroom facilities identified or pre-staged
- ☐ Exercise mementos identified, procured, and pre-staged
- ☐ Simulation aids are setup and tested
- ☐ Smoke generator
- ☐ Shipping containers

- ☐ Barricade signs/tape/rope
- ☐ Injury/medical indicators
- ☐ Moulage
- ☐ Contamination indicators
- ☐ Rugged Ron and family
- ☐ Miles gear
- ☐ Spill simulations (dyed water, straw)
- ☐ Permits (burning, smoke, release of liquids, etc.)
- ☐ Simulator training scheduled (use training checklist) and conducted

E.2.9 Conduct of Exercise Administration/Logistics Checklist

- ☐ Participant rosters distributed
- ☐ Meals distributed
- ☐ Spare communications equipment distributed, on request
- ☐ Medical services performed, on request
- ☐ Movement of controllers and evaluators, on request
- ☐ Public inquiries handled as needed
- ☐ Media inquiries handled as needed

E.2.10 Post-Exercise Administration/Logistics Checklist

- ☐ Meeting (critique) locations are setup and ready (use meeting checklist)
- ☐ Participant rosters collected
- ☐ Critique sheets distributed and collected
- ☐ Critique minutes collected
- ☐ Evaluator sheets collected
- ☐ Communications equipment returned, checked, and accounted for
- ☐ Vests or other participant identification devices collected
- ☐ Mementos distributed
- ☐ Simulations disassembled, cleaned, operation checked, and returned
- ☐ Support vehicles returned
- ☐ Special support equipment collected and returned
- ☐ Trash collected
- ☐ Letters of participation developed and distributed
- ☐ Training records of all participants updated
- ☐ Letters of appreciation distributed to organizations and/or individuals

- ☐ Post exercise evaluator meetings conducted (use meeting checklist)
- ☐ Financial information requested, totaled, and submitted to management
- ☐ Lessons learned report developed (used for the planning, development and conduct of the exercise - not the same as the evaluation report.)
- ☐ Evaluation report developed, approved, and published
- ☐ Findings added to the tracking system

E.2.11 Approval

PREPARED BY: _____ DATE: _____
Exercise Planner

APPROVED BY: _____ DATE: _____
Exercise Director

2. EXERCISE OBJECTIVES

2.1 Introduction

Chapter 1 of this Volume introduced the concept of exercise objectives, their purpose, and attributes of substantive objectives. Well written, measurable objectives are fundamental to the success of an exercise. The Order requires the preparation of specific objectives and evaluation of each exercise. Since the success of an exercise depends on the quality of objectives, and evaluation cannot be performed without measurable objectives, further detail on preparation of objectives is included in this Chapter.

2.2 Objectives Related to Exercise Scope

Establishing the scope of an exercise should be accomplished early in the exercise planning process. Smaller scale exercises may involve site assets with limited or simulated interaction by offsite entities. Larger-scale exercises may involve actual play by several offsite entities. Thus the scope of an exercise establishes *Who* is going to participate. The *Extent* of participation will be established by the objectives.

For purposes of identifying responsibilities, it is useful to categorize or group objectives. Typically objectives may be grouped by geographical area (e.g., event scene, Facility Emergency Control Center (ECC), Site EOC, etc.), function (e.g., notification, consequence assessment, protective actions, etc.), by organization (e.g., Operating Contractor, operations/field office/Headquarters, state, local organizations, etc.), or by relationship to the DOE site/facility, or using a combination of the above.

For example, a grouping by relationship to the DOE site/facility might categorize objectives as follows.

- Facility/Site objectives - involve only site organizational units.
- Offsite objectives - involve only offsite units.
- Joint objectives - involve coordinated site and offsite units.
- Special purpose objectives - designed to accomplish a specific purpose and may involve site and/or offsite units.

Using the categories in the example listed above and grouping by organization will assist in identifying the entity responsible for determining the extent of exercise play (the *How*

much?), and, therefore, the organizational unit responsible for preparation of its objectives. Joint objectives will require the collaboration of more than one entity. Special purpose objectives may be prepared to test, for example, a new capability, such as a mutual aid agreement, that would dispatch a medic response unit within a specified time.

Draft objectives for each organization may not be consistent with or complementary to the draft objectives of other organizations. Conflicts in draft objectives should be identified early in the planning process, and accommodations reached as soon as possible for final objectives.

2.3 Preparation of Objectives

Exercise objectives provide the basis for development of the scenario and a measure by which to gauge satisfactory exercise performance. Scenario planning groups may wish to use the categories and groupings discussed above, to help assign responsibilities for the development of objectives.

Each objective should clearly state what the exercise designers expect to see demonstrated by the exercise responders. The following factors should be considered when developing exercise objectives:

- **Is the objective attainable?** Throughout the exercise development process, an iterative methodology of modifying objectives and the scenario should be ongoing to ensure that exercise participants will have the opportunity to successfully demonstrate the exercise objectives;
- **Is the objective measurable?** The performance addressed by the objective should have observable and measurable indicators; specific exercise evaluation criteria, usually procedure or checklist associated, should be developed by which to measure performance.

Once established, the objectives should clearly define the extent of play in the exercise, identify types of events to be included in the scenario, and provide the entire framework on which the exercise will be designed. The exercise objectives will also be used as the basis for developing performance evaluation criteria.

2.4 Topical Exercise Objectives

This section provides generic examples of topics for objectives, organized by functional areas such as, "Event Scene", "Emergency Response Staff Functions", etc., for use in developing exercises. For larger scale exercises, the examples represent a set of objectives

to be considered. Similarly, a sub-set of this list is appropriate for smaller scale exercises where offsite assets are simulated.

The generic examples are:

- "Generic" in their applicability to typical exercises and not for verbatim use by a particular organization for a specific exercise.
- "Examples" and do not represent a complete set of objectives for an exercise.
- Focused at the site/facility level for an Operational Emergency Hazardous Materials Program exercise. Variations of the examples may be applicable to operations/field offices and Headquarters organizations and to Operational Emergency Base Program exercises.

These examples can be used to create the site/facility specific objectives that possess the required attributes of attainable, clearly stated, measurable objectives. The following examples correlate with the chapter titles of the Emergency Management Guide.

2.4.1. Emergency Response Organization (ERO)

General

- Effect direction and control within the emergency response organization's respective areas of responsibility
- Interface and coordinate among participating response organizations for effective overall emergency response
- Activate the EROs in a timely manner commensurate with the type and extent of emergency
- Activate additional elements of the ERO in response to escalating emergency conditions
- Plan and implement a shift turnover of (selected) emergency response functions

Event Scene

- Perform initial response at event scene appropriate for type and extent of hazards and events
- Analyze event information/data and initiate mitigative/corrective actions
- Establish Incident Command at/near event scene and direction and control of emergency response
- Augment resources in response to actual/potential escalating emergency conditions

Emergency Facilities Operation

- Perform timely activation and staffing of emergency response facilities
- Operate emergency facilities and accomplish the designated functions throughout the duration of the emergency
- Transfer emergency response command and control functions from the facility command center to the site EOC.
- Plan and implement a shift relief for EOC personnel

Emergency Response Staff Functions

- Analyze information/data to formulate mitigative and corrective actions
- Perform safety assessments of event conditions and trending of event data
- Plan and coordinate facility reentry activities with on-scene command
- Coordinate decisions/actions for emergency worker exposure controls
- Coordinate and communicate information/data among scene, facility, site, and field team response elements
- Coordinate the monitoring, control, and decontamination of personnel at relocation areas

- Plan and direct//coordinate activities to repair damaged equipment in support of emergency mitigation

Emergency Response Teams (e.g., Operations, Monitoring, Repair)

- Assemble, equip, brief, dispatch, and track onsite and offsite hazardous materials field monitoring teams
- Assemble, equip, brief, dispatch, and track (repair, damage control, reentry) emergency teams
- Establish contamination control points outside of the contamination areas
- Establish decontamination stations for use by reentry teams

Radiological/Non-radiological Hazardous Materials Surveys, Sampling, and Analysis

- Perform in-facility monitoring for a release of hazardous materials
- Perform in-facility sampling and analysis for (specified) hazardous materials
- Perform sampling and analysis in the field for (specified) hazardous materials
- Provide hazardous material support to the local fire department for event mitigation
- Provide hazardous material assistance to the local hospital in the care of injured persons contaminated with hazardous materials

Fire and Rescue

- Provide timely response with appropriate resources to event scene
- Perform effective fire-fighting/suppression response to mitigate event
- Provide fire-fighting support in an environment with airborne hazardous materials

- Provide fire-fighting support in a potential/actual contaminated area for event mitigation
- Perform search operations in concert with the facility's accountability process
- Perform search and rescue operations for injured victims

Security and Safeguards Measures

- Maintain security of the affected area
- Restrict and reroute traffic on site public roadways
- Perform timely determination of the location, characteristics, and magnitude of the problem/incident
- Determine the intentions and realistically assess the capabilities of the adversary force
- Perform sound overall tactical evaluation of the event
- Carry out timely and effective negotiation activities
- Protective force personnel use minimum level of legal force required to neutralize adversary force

2.4.2. Offsite Response Interface

- Coordinate and communicate information/data with offsite organizations and agencies.
- Dispatch liaison personnel, as requested, to support the activation of state, tribal, and/or local EOCs
- Provide technical analysis and assistance in support of offsite response organizations
- Coordinate offsite hazardous materials monitoring with offsite organizations/agencies

- Provide senior management status reports/briefings to state/local officials

2.4.3. Categorization/Classification of Operational Emergencies

- Recognize, categorize and properly classify the emergency event(s)
- Monitor and assess changing emergency events and conditions
- Review the event classification and revise as appropriate
- Recognize and evaluate improving/stabilizing emergency conditions in preparation for termination of the emergency

2.4.4. Notifications and Communications

- Notify facility/site personnel and initiate call-out of emergency response organization
- Complete required initial onsite/offsite notifications
- Perform ongoing follow-up onsite and offsite notifications
- Transfer offsite notification responsibilities from the facility to the site EOC
- Establish open communication line(s) between emergency response locations
- Communicate timely and effective event information among cognizant response organizations/personnel
- Perform effective intra-organization communication
- Communicate appropriate protective actions to onsite personnel
- Communicate appropriate protective action recommendations to offsite organizations

2.4.5. Consequence Assessment

- Complete an initial consequence assessment
- Provide status briefings to EOC management

- Review and update the event source term
- Acquire meteorological data to support onsite/offsite dose projections
- Perform onsite/offsite dose projections and compare projected data with field data
- Continually assess the consequences of emergency events and monitor safety, health, environmental, and security conditions
- Coordinate release pathway modeling with National Oceanic and Atmospheric Administration (NOAA)

2.4.6 Protective Actions and Reentry

- Determine and implement onsite protective actions (sheltering and/or evacuation)
- Complete personnel accountability at the affected facilities
- Develop protective action decisions and offsite recommendations based on pre-approved default criteria
- Review and update, as appropriate, onsite protective actions and offsite protective action recommendations
- Implement evacuation of (selected) personnel from (selected) facilities/locations
- Coordinate actions necessary to relocate non-essential personnel evacuated from affected facilities
- Establish and operate relocation areas for facility evacuees

2.4.7 Emergency Medical Support

- Provide proper emergency medical care for injured, contaminated workers
- Provide transportation for injured, contaminated workers from the event scene to appropriate medical facilities
- Coordinate local hospital support for multiple injured victims

2.4.8 Public Information

- Issue pre-approved press releases
- Coordinate public information functions with cognizant onsite/offsite organizations
- Coordinate, approve, and issue press releases
- Conduct press briefings
- Monitor public information reports, identify, and respond to inaccurate information
- Provide and respond to requests for information from the media, public officials, and/or local/state/Federal agencies

2.4.9 Emergency Facilities and Equipment

- Command Center space, layout, and installed equipment is adequate to support assigned staff functions and response activities
- EOC communications and support equipment is operational and adequate to support EOC functions/activities
- Emergency response team(s) communications and support equipment is operational and adequate to support team(s) functions/activities
- The space and layout of emergency response facilities are adequate to support assigned staff functions and activities
- Portable equipment necessary to support response teams is readily available and operational
- Radiological/non-radiological instrumentation and monitoring equipment is calibrated and operational

2.4.10 Termination and Recovery

- Terminate the emergency based on established criteria and in coordination with state and local authorities
- Establish goals and priorities for recovery planning

- Identify and designate a recovery organization
- Prepare a recovery plan outline in concert with appropriate onsite/offsite organizations
- Brief state/local officials on the recovery plan

3. EXERCISE CONTROLLER AND EVALUATOR MANUAL

3.1 Introduction

The Exercise Controller and Evaluator Manual is designed to prepare DOE exercise controllers and evaluators to effectively perform their assigned functions during Emergency Management System exercises. It is organized to provide pertinent information concerning the exercise development, control, and evaluation processes. Specific controller and evaluator responsibilities before, during, and after an exercise are presented in detail. This Manual performs the following functions.

- Augments Volume VII, Chapter 1.
- Details the roles of controllers and evaluators in exercises.
- Explains the materials used by controllers and evaluators.
- Provides techniques on how to effectively perform the controller and evaluator functions.

The Manual is structured so that sections can be read independently of, or in conjunction with, one another. Section 3.1 provides an overview. Section 3.2 details controller functions, while Section 3.3 is dedicated to evaluator functions. Controllers and evaluators may only need to review the section that applies to their assigned function(s) during the exercise. However, individuals assigned to both controller and evaluator roles should read the Manual in its entirety. Section 3.4 provides information relative to the exercise evaluation and critique process that is applicable to both controllers and evaluators.

3.1.1 Exercise Organization

The exercise organization consists of the Exercise Director, responders, controllers, evaluators, and observers. Each performs specific assignments and roles. The following summarizes an exercise organization.

Exercise Director, as the senior exercise official, has primary authority and overall responsibility for the design, development, control, and evaluation of the exercise.

Controllers provide direction and control of the exercise. They monitor the sequence of events as they unfold, and are responsible for exercise safety within their span of control. Individual controllers may initiate certain actions in order to ensure the continuity of events described in the exercise scenario. It is their responsibility to ensure that

responders *do not* respond in a manner that might jeopardize safety and that responders remain focused on exercise play that demonstrates the exercise objectives. The control organization will vary in number depending on the exercise scope and may include the following controller positions.

- **Senior controller** is responsible for coordination and oversight of all other controllers.
- **Lead controllers** may be used to coordinate the activities of several controllers for larger or more complicated exercises that involve a number of response locations and emergency functions. Controller teams may be organized by location, function, or a combination of both depending on the needs of the exercise. However, controller team leaders should have previous experience as an exercise controller before they are selected to lead a team.
- **Control cell** is a simulation center located away from the responders. It is staffed by experienced controllers (and/or actors) who simulate or role-play non-participating organizations by providing input to responders, via telephone, on behalf of any non-participating individuals, companies, agencies, or Emergency Response Organization (ERO) members that would normally be involved in responding to an emergency. Role-players in a control cell are subject to evaluation of their performance just like any other exercise controller.
- **Timeline coordinator**, for complex exercises, is responsible for ensuring the exercise timeline remains on schedule—a key factor for proper attainment of exercise objectives. Should exercise play cause deviation from, or a delay in, the timeline, it becomes necessary to use previously prepared contingency materials. The timeline coordinator, typically co-located with the Exercise Director, is responsible for specific tasks or actions from the control cell. The timeline coordinator receives timeline status reports from lead controllers and provides this information to the senior controller and Exercise Director.
- **Actors/role-players** are controllers who simulate members of non-participating organizations and role play key individuals, such as injured personnel. They may come in face-to-face contact with the responders, functioning semi-independently as media reporters, next-of-kin, or injured personnel. They may be members of a control cell with telephone communication being the only interaction with responders.

Evaluators document and evaluate responder performance and the adequacy of facilities and equipment against established emergency plans and exercise evaluation criteria.

Individual evaluators are unbiased, objective, technical or functional experts tasked to evaluate responder performance, facilities, and equipment against emergency plans, implementation procedures, and checklists. The evaluator organization will vary in number depending on the exercise scope and may include the following evaluator positions.

- **Senior evaluator** is responsible for the coordination of all evaluation functions including preparation of the exercise evaluation report that identifies findings and specifies corrective actions.
- **Lead evaluators** may be used to coordinate the activities of several evaluators for larger or more complicated exercises that involve a number of response locations and emergency functions. Evaluator teams may be organized by location, function, or a combination of both, depending on the needs of the exercise. Evaluation team leaders are responsible for the coordination of a team of evaluators assigned to particular locations and/or similar response functions. As with the control organizations, evaluation team leaders should be selected on the basis of previous experience and demonstrated ability to successfully perform as an evaluator.

Responders, often referred to as “players,” usually comprise the majority of people involved in the exercise. It is their responsibility to take whatever actions are necessary to mitigate the simulated emergency and thus demonstrate the ability to ensure the safety of facility personnel, the public, and the environment, in accordance with established emergency plans.

Observers may be present to observe the exercise for either official or educational purposes. The attendance of observers at an exercise, their locations, and rules of conduct should be determined by the Exercise Director. Observers should not interact with responders, contribute information or opinions, or interfere with the exercise in any other way. Observers should direct all questions or comments related to the exercise to the controller for their area or escort, if appropriate. Although they may have prior knowledge of the scenario, observers should be held responsible for withholding that information from the responders.

Video teams and still photographers, considered observers for exercise purposes, may be used to document the exercise. These teams may film, record, and photograph response activities, as long as they do not interfere with exercise play.

3.1.2 Controller and Evaluator Selection

Controller and evaluator functions generally should not be combined. Each role has specific responsibilities that require total concentration to be performed effectively. If circumstances require that an individual be assigned to both roles, that individual must have a thorough understanding of controller/evaluator requirements and responsibilities.

It is highly recommended that individuals who fill controller positions have extensive emergency preparedness experience and have previously participated in a variety of tabletops, drills, and exercises so that they know what behaviors and actions to expect from responders. Each controller should serve in that capacity for several exercises to provide continuity and consistency. Personnel who serve as controllers should be current on updates and upgrades to the emergency plans and implementation procedures that will be demonstrated at the locations they will control during exercises.

Evaluators are selected based on knowledge of, and experience with, the functions they are to evaluate. It is important that they are technically competent to judge the actions of the responders. Wherever possible, their experience should be equal to or greater than that of the responders in their assigned area.

The conduct of effective emergency exercises depends on the selection and assignment of top-quality controllers and evaluators. Although these individuals may be drawn from non-participating areas of a response organization, care should be taken to ensure that use of these personnel to support the exercise does not compromise the effectiveness of the response organization.

3.1.3 Role of Controllers

Controllers are primarily responsible for ensuring the continuity of the scenario and maintaining safety and security.

Controllers play a crucial role throughout the exercise process. *Their first and most important function is to maintain exercise safety.* They maintain the sequence of events, control the flow of message injects, and are responsible for the overall conduct of the exercise. Controllers are in a unique position to view exercise play, understand the dynamics of an action or activity as it unfolds, and comment on what they observe. Controllers provide scenario information to responders as it is earned and may be tasked to inject approved contingency messages to keep the exercise on track with the scenario and the exercise timeline. Controllers should do the following.

- Prior to the exercise, review appropriate Emergency Plans, procedures, and documents.
- Prior to the exercise, review appropriate exercise package materials, including the objectives, scenario, messages, Safety and Security Plans, and controller instructions.
- Attend required training and briefing sessions.
- Conduct the exercise by providing applicable scenario information to responders.
- Allow freedom of responder decisions and actions (i.e., free play) to demonstrate exercise objectives and response capabilities.
- Inject approved contingency messages or provide instructions, as needed, to keep the exercise on track with the scenario.
- Preclude responder decisions and control actions that may compromise the safety or security of personnel or the facility.
- Refrain from prompting, in any fashion, the decisions or actions of responders.
- Prevent observers and evaluators from having interaction with responders.
- Be prepared to suspend exercise activities in the immediate area and to use pre-arranged protocols to terminate an exercise.

3.1.4 Role of Evaluators

An evaluator's function during the exercise is to observe and document exercise activities and conditions. The evaluation assessment is performed after the exercise is terminated.

Evaluators document and evaluate the performance of the responders and the facilities, equipment, and resource documents (e.g., drawings, reference materials, maps) used by the responders. Evaluators are assigned specific locations or responder functions to evaluate. Responder performance *must* be evaluated against plans and procedures using criteria established prior to the exercise. Evaluators document the responders' performance and attend the critique facilitated by the controllers immediately following the exercise during which the responders discuss their performance. The evaluation, documentation, and critique discussion(s) provide important evidence that substantiate

exercise findings. The evaluators' report summarizes the overall results of the exercise and provides a comprehensive assessment of the emergency response performance. Evaluators should do the following.

- Review appropriate emergency response plans, procedures, and documents prior to the exercise.
- Prior to the exercise, review appropriate exercise package materials including the objectives, scenario, messages, Safety and Security Plans, and evaluator instructions.
- Attend required training and briefing sessions.
- Observe the performance of the responders during the exercise and document their actions using evaluation modules or checklists.
- Observe the performance of the control organization in controlling and directing the exercise.
- Refrain from interfacing with responders to prevent interrupting or prompting their decisions or actions.
- Evaluate responder performance and the adequacy of procedures, facilities, and equipment based on specific evaluation criteria.
- Document errors and problem areas in the scenario or conduct of the exercise.
- Present their evaluations and recommendations in a formal critique.

3.1.5 Controller and Evaluator Training

A formal training program for controllers and evaluators enhances the capability of the Emergency Management Program to maintain a level of consistency in how exercises are managed and response capabilities are evaluated. The training program should include both initial and exercise-specific training to provide controllers and evaluators with the information and direction necessary to perform their duties with confidence. Both generic and exercise-specific training is detailed in Chapter 1 of this Volume.

3.1.6 Keeping Exercise Material Confidential

Exercise information should be closely guarded and not discussed with potential responders. Scenario materials should be kept under lock and key at all times, unless being used. All copies of the exercise package should be numbered and assigned while under review to ensure accountability during the review/development period. To ensure that exercise confidentiality is maintained, controllers and evaluators should do the following.

- Be careful of what they say and to whom because it may be overheard.
- Take care in positioning themselves while observing an exercise activity to ensure they do not give away specific information by their actions.
- Ensure responders cannot read their scenario, timeline, notes, inject messages or other sensitive materials before or during an exercise.

3.1.7 Exercise Evaluation by External Organizations

Exercises are subject to evaluation by “external” Departmental organizations (i.e., an organizational entity beyond that of the immediate facility/site conducting the exercise), including the cognizant Operations Office and the Headquarters Office of Emergency Management. These evaluations include an evaluation of the manner in which the exercise is controlled and evaluated and an evaluation of performance of the controller and evaluator organizations.

3.2 Controller Activities

Controller responsibilities include pre-exercise setup, exercise conduct, and post-exercise activities. These responsibilities are summarized in Figure 3.1. The following section reviews methods of controlling an exercise, as well as specific responsibilities of controllers before, during, and after an exercise.

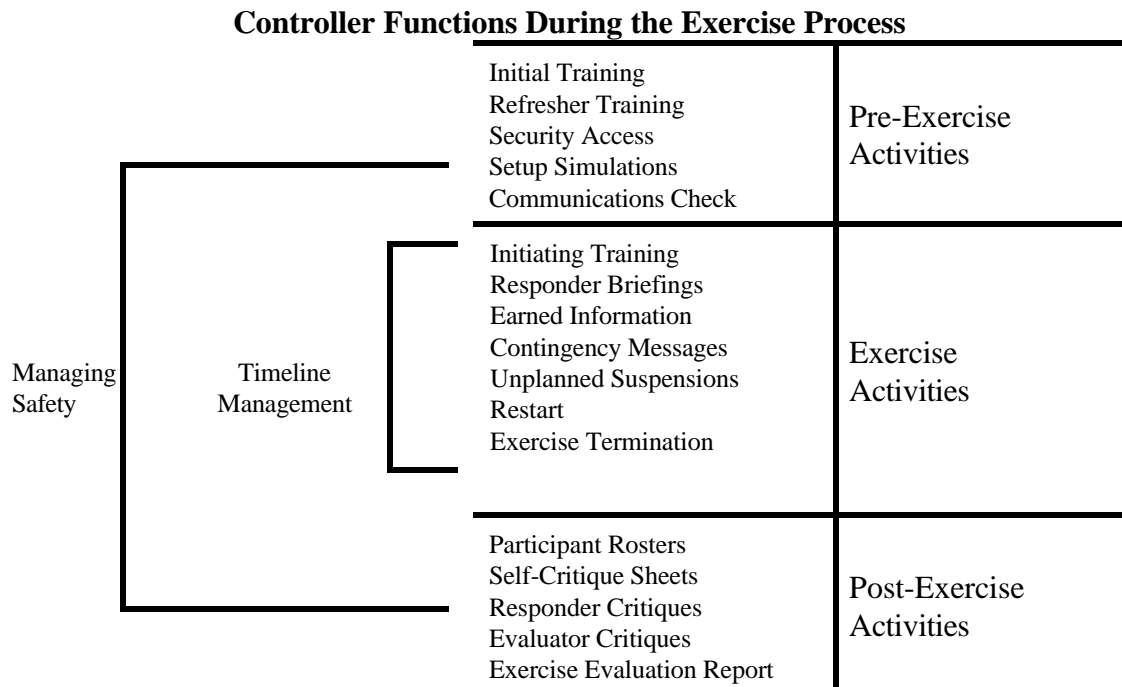


Figure 3.1. Sample Controller Responsibilities

3.2.1 Pre-Exercise Activities

Controllers must review the exercise and scenario materials, attend exercise-specific training, perform communication checks, set up simulations, and conduct pre-exercise safety and security checks before an exercise.

Controller Package. Controllers should be issued their materials for review prior to the exercise-specific training. The controllers, being experienced personnel, may be tasked to help the scenario developers finalize scenario details. The controller package may consist of part or all of the contents of the exercise package.

A cover page should remind the controllers of the confidentiality of the scenario materials.

Because some exercise packages are very large documents, controllers may need to reorganize the material so that the information critical to their specific assignment is readily accessible. Controllers should bring their packages to the exercise-specific training sessions and be prepared to discuss any concerns or questions they have about this information. The controller package should include, as a minimum, the following information.

- Schedule of control activities.
- Control organization and assignments.
- Procedures for reporting within the control organization.
- Suspension and termination procedures.
- Scenario material.
 - Objectives.
 - Scenario narrative.
 - Timeline and Master Scenario Event List (MSEL).
 - Position-specific messages or injects, including associated data.
- Controller position-specific safety and security instructions.

Exercise-Specific Training. Exercise-specific training is also known as controller and evaluator training, pre-exercise training, scenario training, or the pre-exercise briefing. Regardless of what it is called, the overall objective is to prepare the controllers to safely and effectively control the exercise without compromising the scenario or prompting responder actions. Controllers who do not attend the training should not serve as controllers during the exercise.

Day of Exercise Preparations. On the day of the exercise, controllers report to the staging area with their notes, scenario messages, data sheets, controller log forms for recording activities, and any other materials assigned. Controllers should have reviewed their instructions (example in Figure 3.2), and highlighted specific responsibilities and messages that they are responsible for delivering.

Setting Up Simulations. The controllers may be required to assist in setting up the simulations that will be used in their control areas. This may include the preparation of smoke generators, positioning of special equipment or vehicles, simulated spills, and injured role players. It may also include the pre-staging of simulations for use later in the exercise or for contingency purposes. All simulations should be checked before reporting “ready.” It should be remembered that realism is second only to safety.

Pre-Start Safety Checks. Prior to the beginning of the exercise, pre-start safety checks are conducted. These include the checking of simulations, posting “EXERCISE IN PROGRESS” signs, weapons safety checks, and a final communication check with the lead controller.

The Exercise Director will not start the exercise until notified that all controllers have performed their communications check, verifying that they are at their assigned location and that their safety checks have been completed. The lead controller will give the control organization a time check (synchronizing watches). Large exercises may be started at a predetermined time while smaller exercises may be started by voice command over the communications network.

GENERIC CONTROLLER INSTRUCTIONS (SAMPLE)

1. Review the exercise objectives and controller package for your area of responsibility.
2. Using the Master Scenario Events List, highlight the specific messages for which you are responsible.
3. Be located in the appropriate emergency response facility at least 30 minutes prior to the start of the exercise. If you are not assigned to a specific facility, be in place to meet the responders at least 15 minutes prior to their activation.
4. Obtain or locate necessary communications equipment and test it to ensure satisfactory communication between controllers and the lead controller and/or the timeline coordinator.
5. Wear controller identification, such as the required badge, arm band, or vest.
6. Synchronize your watch with the lead controller to ensure that the exercise timeline and the controller logs are consistent.
7. As instructed, distribute an exercise participant package to specific responders. This may include exercise limitations, meteorology, instructions, and the exercise telephone directory.
8. Do not enter into personal conversations with any exercise responder.
9. Deliver the messages you have been assigned at the time indicated. *Caution:* If the information depends on some action to be taken by the responder, do not deliver the message until the responder has earned the information by successfully accomplishing the required action.
10. When you deliver a message, notify the lead controller with the message number and the time delivered.
11. Begin and end all exercise communication over the radio or telephone with the phrase **"This is an exercise message."** This precaution is taken so that anyone overhearing the conversation will not inadvertently mistake the exercise play for an actual emergency event.
12. If you are to deliver specific data, deliver it as directed on the message instructions. (Examples: Do not deliver vital signs of an accident victim until the first responder attempts the appropriate actions for obtaining these; do not volunteer radiation readings until the technician has turned on and read the detection instrument.)
13. Record all activities and the time in your controller log. Do not write opinions; rather, write about specific actions.

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Figure 3.2. Sample Generic Controller Instructions.

GENERIC CONTROLLER INSTRUCTIONS (continued)

14. If responders do not perform as expected and a contingency message is not provided, notify your lead controller immediately and ask for direction. No unplanned simulations should be allowed without the lead controller's approval. This differs from free play, which is action taken by a responder that is appropriate in solving the problem in a unique way.
15. Do not prompt a responder as to what a specific response should be unless a contingency message directs you to do so. Clarify information as long as it does not provide coaching.
16. Ensure that all observers stay out of the exercise activity. If you need assistance, notify your lead controller or security.
17. Do not provide information to the responders regarding scenario event progress or resolution of problems encountered by others. Responders are expected to obtain information through their own resources.
18. You will be notified by your lead controller when the exercise has been terminated. The exercise will be terminated when the Exercise Director, in conjunction with the lead controller, determines that all exercise objectives have been met, or enough time has elapsed for the objectives to have been demonstrated.
19. Pick up copies of responder logs and pertinent documentation prior to the post-exercise debriefing and critique. This information should be given to the lead controller. Coordinate this task with the evaluator in your area.
20. At exercise termination, summarize your notes and prepare for the local area critique. Have the summary ready to turn over to your lead controller. The facility lead controller shall provide this documentation to the area/site lead controller.

THANK YOU VERY MUCH FOR YOUR HELP

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[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory 1994]

Figure 3.2. Sample Generic Controller Instructions (continued).

3.2.2 Exercise Activities

The control organization plays the crucial role in monitoring the sequence of events, injecting messages, and ensuring the overall safe conduct of the exercise.

Monitoring For Safety

A controller's primary function is to ensure the safe execution of an exercise. The safety of everyone involved in the exercise, as well as the facility, public, and the environment, is the highest priority.

Controllers are responsible for knowing the limitations and precautions for both safety and security for the exercise and for understanding and using this information to ensure that all participants comply accordingly. The precautions and limitations are provided to the controllers in the exercise Safety Plan and Security Plan and also in exercise-specific training. Such information may include details on physical security (such as facility access control), safety (such as the location of fire doors), information security (such as the location of classifiers to ensure classified information is not divulged), and other privileged instructions.

All participants in an exercise are responsible for acting in accordance with appropriate safety plans and are bound by DOE requirements, as well as local laws and restrictions. It is the responsibility of the controller to stop any action that would violate any law or safety protocol. General safety rules applicable to all participants may include the following.

- Comply with all Federal, state, and local legal restrictions.
- Obey all traffic laws when responding to the exercise.
- Wear all personal protective equipment required for the job.
- Do not place yourself or anyone else in an unsafe position.
- Obey the directions of the controller at the scene.
- Preface and end all radio, telephone, and other communications with “This is an exercise.”
- Ensure any weapons being used are empty and on SAFE.

- Contact a controller in the event of an actual emergency.

Methods of Control. Exercise control, in terms of the autonomy and authority of individual controllers, varies depending on the complexity of the simulated events, the number of participating organizations, and the number and experience level of the controllers. Individual controllers may be delegated extensive, limited, or possibly no authority to issue message injects and contingency message injects without the Exercise Director or senior controller direction. The method of control for each exercise should be identified, documented, and the controllers trained as to the level of authority they have for message inject release and subsequent reporting.

Presenting Scenario Information. Controllers either initiate simulations or provide the description of the initial conditions to the responders. Controllers should introduce themselves and evaluators in the area and identify the exercise safety and ground rules. Simulations should be identified to the responders. For example, responders might be told that the real meteorological conditions will **NOT** be used and what the predetermined (“canned”) wind speed and direction are. Generally, it is the controllers' responsibility to set the stage for the event in their assigned area. The controllers depend on directions from the lead controller.

Scenario information (including physical evidence and visual cues) should be presented in a realistic manner to the responders as it would be found, measured, or otherwise indicated. After a valid field measurement is taken, the controller should inject the scenario value. For consistency and documentation, controllers should use data and instrument readings provided in their controller packages when giving technical information to responders. Visual cues such as victim moulage, liquids, solids, smoke, and other stage props should be used to make the event appear to the responders as if it were actually occurring. If emergency procedures require the use of protective equipment and clothing, the participants should use the actual protective equipment and clothing during the event.

Controllers should not intercede in exercise play unless it is warranted by safety considerations. Controllers should not prompt by providing information early, providing more information than the responder has earned, or phrasing sentences in a way that would cause the responders to perform an action.

- **Realism Versus Simulation**

Making the exercise as real as safety will permit is one of a controller's prime considerations. The more realistic an exercise is, the less information needs to be provided to responders.

The value of an exercise is to demonstrate response capabilities under simulated emergency conditions. Although it is impossible to predict or measure precisely what response would be under actual emergency conditions, a realistic exercise can provide a good overall picture of the response capabilities of each participating organization. The realistic presentation of information during exercises can create the sense of pressure and stress inherent in actual emergency situations.

Controllers should provide information to responders in a form and manner consistent with what would occur in an actual emergency, and present scenario information earned by responders as a result of their actions. Responders should carry out every activity and response action exactly as they would in an actual emergency, such as using emergency equipment and checking instrument and meter readings. However, responders should only walk through or discuss the response actions that would be necessary to restore or realign equipment using panel switches, to avoid changing critical process or plant equipment alignments and parameters.

- **Free Play**

It is the controllers' responsibility to monitor free play, note activities, and intercede when free play exceeds the limits established for the exercise or when safety is jeopardized.

Free play is a welcome part of an exercise because it allows responders to provide unique solutions to problems and to respond in ways not foreseen by the exercise planners. In order for free play to be successful, it must fall within prescribed parameters. If the responder actions compromise safety or exceed established limitations, the controller should note the intended action but prevent that action from actually occurring.

- **Tracking the Scenario and Responder Actions**

One of the controllers' most important and difficult tasks is maintaining the timeline for scenario events and tracking responder actions. Controllers should record the time of all significant events associated with their part of the exercise, to include the following.

- Time of message delivery.
- Contingency message delivery.
- Responder key decisions and mitigation actions.
- Free play.

- Conversations with responders (or other controllers).

Controllers should note the effects of the messages on play and any other unexpected activities, and they should report any discrepancy in scenario progress immediately to the lead controller. Later, controllers from different areas can meet to develop a consolidated timeline of exercise play and discuss how the exercise progressed overall.

Maintaining Exercise Pace and Focus. The lead controller, with the assistance of the timeline coordinator, should manage the exercise and ensure that the sequence of events identified in the exercise timeline occurs as close to schedule as possible. Individual controllers should follow the overall exercise timeline in order to keep their respective parts progressing in accordance with the scenario.

- **Use of the MSEL**

The MSEL is one of the primary tools that controllers use to track the progress of the scenario. Evaluators will find that the MSEL is a useful tool for determining whether and when expected responses occur.

An MSEL lists all exercise messages and key events in a table that specifies the time the message is expected to be delivered, who delivers it to whom, a message number, and a short description of the message. Some MSELs also contain the responder-expected actions and associated exercise objectives to assist the controllers and evaluators in performing their functions.

- **Use of Scenario Messages**

Controllers use prepared scenario messages (also known as controller injects, cue cards, and data input) included in their exercise package in conjunction with the MSEL. These messages include information on the placement of props, initial conditions, set-up of the area, and placement of observers. Messages that contain information on activities that are dependent on the completion of other activities should also include information on what to do if that initiating activity is not completed. If this information is not readily available, the controller should contact the lead controller. Exercise messages are developed to do the following.

- Create situations.
- Provide specific instructions and data.
- Correspond with activities required by emergency plans, procedures, checklists, etc.
- Notify participants of safety or compliance violations.

- Keep the scenario on track.

During the exercise, controllers inject messages through one of three methods: voice, hard copy, or face-to-face contact.

Voice. Controllers inject oral messages to control progress of the exercise scenario. These messages include descriptive information that simulates an event or condition, or they may initiate a specific activity that will keep the scenario on track. These messages are given by the controller on location, or over the phone or radio by a controller at a different location such as a control cell. At specified times, controllers will contact the appropriate responder(s) and read the prepared event text verbatim.

Hard copy. Hard copy messages are designed to simulate electronic messages, memoranda, Material Safety Data Sheets, strip charts, news bulletins, etc. At designated times, controllers will deliver these messages to the appropriate responder. Messages of this type are provided on data cards or sheets of paper with appropriate time-related plant and radiological parameters, real-time data generated by a simulator or computer, or audiovisual presentations of data such as moulage, charts, pictures. Parameters can be posted on appropriate control room panels, on cameras for viewing in several locations, or posted at, or generated by, computer terminals and printers. When hard copy messages are provided, no additional comments are made by the controller.

Face-to-face contact. Occasionally, selected controllers may play the role of a senior official, a decision maker, or an outside agency representative. While role playing, the controller interacts face-to-face with participants and provides information or responses to questions in a fashion appropriate for the role he/she is playing.

Messages help direct the progress of the exercise and clarify situations that cannot easily be described. Messages should normally include only information the participants could gain with their own senses (i.e., sight, hearing, smell, touch, and taste) in their location. Emergency situations like fires, tornados, injury of personnel, alarms sounding on control boards, suspected intruders, and radiation monitor alarms can be described in exercise messages.

Messages may appear in several different formats based on how they will be used during the exercise. Message formats may include data sheets, charts, pictures, and hard copies of voice messages. Information contained in the message should include the recipient, the time of delivery, the expected responder action, and any

additional information or directions for the controller. The controller should generally *not* give the entire hard copy of the message to the responder. Only the information portion of the message should be delivered to the responder. Occasionally, the controller may give a message directly to a responder; for example, such as a note from simulated hostage takers.

Messages should not be used to describe situations that participants can and should recognize from facility data. A message such as “temperature is increasing” is usually inappropriate because it prompts responders with information that would not be provided in that form in a real emergency. The controller should understand and be aware of the action that a responder should take in response to a message. Thus, a message with an “actions expected” section may be provided to controllers (not passed to participants) so that they will be aware of what the responders should do.

Generally, controllers should provide the information to the responders as they progress through the scenario and “earn” information. To earn information, the responders must act in a manner that would provide them the information in a real event. For example, if a message states that the oil bull's-eye on a pump is empty, then the controller should provide that information when the participant looks at the bull's-eye. If participants follow appropriate steps for obtaining the information, the controller may then provide it. Controllers should only provide earned information and nothing else that would instruct the responders in how to proceed.

For simulated events such as fires, controllers should provide the “scene setting” information as responders earn it. For example, in approaching a closed fire door, the controller should tell a team member “the door is hot” only after the team member has actually touched the door. Likewise, the team member would be told “the room is filled with smoke” only after the door has been opened. Information is provided in a sequence replicating the approach to an actual fire.

- **Contingency Messages**

Controllers use contingency messages to force an action by a responder or response organization to keep the exercise on track. Controllers should issue contingency messages in accordance with the pre-established exercise protocol for their use. If responder actions require a contingency message, the controller should contact the responsible lead controller before injecting the message.

Contingency messages provide supplemental symptoms or necessary information specifying existing conditions that will elicit the appropriate decision or response. Contingency messages should begin with an explicit directive such as the following.

- “Declare a general emergency for the following reasons....”
- “Contact the state at this time to recommend the following action....”
- “To keep the exercise on track, order a site assembly at this time.”

In some cases, a contingency message may be issued solely to keep the exercise scenario coordinated. An example contingency message would be one preventing operations personnel from beginning a radiological release until a pre-established time so that time-dependent, hard-copy radiological data remain credible for the plant status and conditions being simulated.

A negative exercise finding may result if exercise play does not occur as expected, and responder(s) must be provided a contingency message to induce activities that should have occurred without controller intervention.

Suspension or Termination of an Exercise

The controller's role in suspending, restarting, or terminating an exercise is to ensure that responders clearly understand when these actions have been implemented. Controllers also provide specific instructions to responders covering any requirements or activities they must undertake. In the case of restart, responders may have to "redo" activities because they are critical for responder performance at other locations.

The suspension or termination of an exercise is managed through the control organization. Responders are instructed to contact a controller when an unsafe condition exists or when an actual emergency is identified. The exercise package identifies how the control organization will be notified and the procedures for exercise suspension, restart, and/or termination. Figure 3.3 is an example of suspension and termination instructions.

● **Suspension**

Provisions for suspension or premature termination of the exercise for safety reasons are provided in the controller package. If an unidentified or questionable situation arises that may affect the participants, a controller may suspend play and immediately notify the lead controller. Play may be restarted if the situation is resolved.

In the event of a real emergency, it is the controller's responsibility to suspend the exercise in the immediate area for which he/she is responsible and to contact the lead controller. An actual emergency always takes precedence over an exercise. If necessary, the Exercise Director may terminate the exercise so that resources can be devoted to the real emergency.

SAMPLE SUSPENSION AND TERMINATION INSTRUCTIONS

The exercise is scheduled to begin at 8:00 a.m. Mountain Standard Time (MST) or 10:00 a.m. Eastern Standard Time (EST). No responders should be pre-positioned, and response should be in accordance with established policies and procedures. The exercise is scheduled to run 6 hours with termination at 2:00 p.m. MST/4:00 p.m. EST. Each emergency response facility participating in the exercise should conduct a critique of their involvement immediately following the exercise. All controllers and evaluators are expected to take notes of items identified by the exercise responders. If controllers or evaluators are asked for their impressions of how things went, specific issues or problems should not be discussed.

The exercise may be terminated by the Exercise Director when exercise objectives have either been demonstrated or given an adequate opportunity to be demonstrated. Following consultation with the lead controller and lead exercise evaluator, the Exercise Director will make the announcement concerning exercise termination.

If an *actual emergency occurs*, the exercise may be suspended or terminated at the discretion of the Exercise Director. DOE, Federal, State, Tribal, local, or DOE contractor authorities, depending on the nature of the incident, may recommend termination to the Exercise Director.

If the exercise is suspended, the controllers will instruct the responders to safely stop in place. The conditions for restart of the exercise will be determined by the exercise director in consultation with the lead control personnel from the participating organizations. The controllers will be instructed on what conditions are to be set for restart.

Figure 3.3. Sample Suspension and Termination Instructions.

- **Termination**

Information concerning the procedures and protocol for terminating an exercise should be included in the controller package and reviewed at the pre-exercise briefing. Termination of the exercise at any time is under the authority of the

Exercise Director. Upon notification from the Exercise Director or a lead controller, the controllers should immediately announce the termination of the exercise, record the time, and ensure that responder exercise activity ceases.

In general, an exercise will be terminated when one of the following conditions is met.

- Exercise objectives have been met and the pace of play indicates that major events have been drawn to a logical conclusion.
- Enough time has elapsed to allow the objectives to be demonstrated.
- An actual emergency occurs.

Sometimes, facility locations and offsite organizations have specific objectives (e.g., recovery and reentry) that are not applicable to other exercise locations. If that is the case, the lead controller should determine the extent of play necessary to permit those locations/agencies to meet their objectives. In such cases, termination of an exercise may be staggered for different groups of responders.

Premature termination of an exercise presents a problem among response organizations in that it may preclude them from meeting their objectives. To prevent premature termination, the Exercise Director should obtain concurrence from lead controllers that objectives have been demonstrated or sufficient opportunity has been provided for the objectives to be demonstrated prior to terminating the exercise.

3.2.3 Post-Exercise Activities

The two primary post-exercise duties for controllers are facilitation of responder “hotwash” critiques immediately following the exercise and participation in the exercise evaluation process. Since the controllers ensured the pace and focus of the exercise, they have unique understanding of who performed response actions when and why and, therefore, typically lead the hotwash critiques. Controllers typically provide input to the critique and evaluation process because of their in-depth familiarity with the exercise activities and responder actions.

3.3 Evaluator Activities

Preparation is key to effective evaluation. Persons assigned as evaluators cannot just show up on the day of the exercise. The evaluation may significantly change the way

the facility/site responds to an emergency and should be based on the specific Emergency Management Program and specific scenario.

3.3.1 Pre-Exercise Activities

Evaluators should be trained and thoroughly prepared for their assigned duties for each exercise. Understanding the scope, exercise objectives, and evaluation criteria, and being familiar with emergency plans and implementation procedures will help ensure that the evaluators can concentrate on observing the actions of the responders.

Evaluators have the following three primary responsibilities prior to the exercise.

- Obtain and review all emergency plans, procedures, and checklists for the activities to be evaluated.
- Understand the exercise objectives and know how they relate to the evaluation criteria.
- Attend the pre-exercise training.

Additional information about the site or facility being evaluated should be provided to those evaluators who work at another facility or site. This information should include the ERO structure, procedures, notifications, communication systems, Incident Command System, facility walk-downs, and maps.

Emergency Plans and Implementation Procedures

Evaluators should understand the Emergency Plans and implementation procedures being used by the responders they are evaluating. The evaluation includes an assessment of responder implementation of the plans and procedures, as well as an assessment of the adequacy of these plans and procedures.

Emergency Plans and procedures frequently are updated. Failure to review them may result in evaluator errors and skewed evaluation results. The person assigned as lead evaluator should ensure that the evaluators receive the plans and procedures far enough in advance to allow for a thorough review and that evaluators assigned to the exercise know the importance of the plan and procedure review.

Exercise Objectives, Criteria, and Checklist Relationship

Evaluators must understand the relationships between the exercise scope, objectives, evaluation criteria and the evaluator checklists prior to the exercise. This relationship provides the evaluator with insight on what has to be done, which items are critical, and how findings should be classified.

Exercises test response capabilities according to a set of measurable exercise objectives. Each objective is associated with a standard of performance, or criteria, that must be met to demonstrate that objective. Checklists are derived from these criteria to assist evaluators in measuring performance. The relationships between these elements and how they fit together in the evaluation process are described in the following paragraphs.

Generic exercise evaluation criteria is provided in Volume VI, Chapter 3, and should be used to develop exercise-specific evaluation criteria as part of the exercise development process. Exercise-specific criteria are then used by evaluators to determine if an exercise objective has been adequately demonstrated. Figures 3.4 and 3.5 exemplify how evaluation objectives, criteria, and checklist items are tied together in evaluation materials.

Though checklists vary from site to site, they should contain the following items.

- Method for recording a chronology or timeline of observed events.
- Standards related to a specific exercise objective.
- References for that standard.
- Criteria associated with the standard.
- Activity-specific criteria (list of activities to look for).
- Method for documenting and commenting on these specific activities.

Evaluation checklists for documenting specific activities may vary from yes-or-no answers for activity-specific criteria to numerical evaluations and/or evaluator comments. Standardized forms may simplify the process of documenting observations and analyzing the combined results. A simple form with brief instructions and space to list identified concerns works well, as does a checklist that rates various activities. Evaluation forms should be as straightforward as possible and should have space to identify the evaluator, location, activity observed, responders observed, and the time and date.

Evaluator Package. Evaluators are issued their materials for review prior to the exercise-specific training. The evaluator package is a subset of items provided in the exercise package, as well as specific evaluator instructions and other items. Because the exercise package can be very large, evaluators should reorganize the information so the information critical to their assignment is readily accessible. They should bring the

package to exercise-specific training and be prepared to discuss any questions about information in their packages. The evaluator package should include the following information.

- Cover letter discussing scenario confidentiality and providing a point of contact.
- Chart or listing of the evaluation organization.
- Plans, procedures, and checklists used by the organization or people evaluated.
- Detailed instructions for the evaluator, including a schedule of events.

Objective: Given the decision to activate the EOC, achieve operational status within 1 hour in accordance with emergency procedures.

Criteria: A.3 Members of the ERO effectively demonstrate their roles, functions, and use of emergency equipment/facilities as outlined in the approved Emergency Plan and procedures.

A.7 Control of operations, monitoring, and repair teams is clearly vested in either a single emergency facility or clearly defined among multiple emergency facilities.

References: <Site> Emergency Plan, <Site> EOC Implementing Procedure

Checklist: Criterion A.3:

1. The following positions were staffed within 1 hour:

____ Emergency Director

____ Federal Communicator

____ Plume Modeler

____ . . . (per procedures)

2. The Emergency Director:

____ Completed a turnover from the shift supervisor and assumed overall direction and control within 15 minutes of arrival at the EOC

____ . . . (as per procedure)

Figure 3.4. Sample Evaluation Form.

F15	INCIDENT COMMAND GROUP EVALUATION CRITERIA
OBJECTIVE:	Assemble, equip, brief, dispatch, and track offsite monitoring teams.
REFERENCE:	LANL Emergency Management Plan ERPIP 520 HAZMAT Group Supervisor Memorandum of Understanding between the County of Los Alamos and the Department of Energy, 3/22/93.
1.	Los Alamos County or the New Mexico Department of Public Safety MOUs are implemented by request of the County Police Department Shift Commander, County Fire Department Shift Commander, County Fire Department Incident Commander, LANL Duty Emergency Manager, or the NM Department of Public Safety.
2.	Monitoring teams are equipped then assembled in the staging area or other area determined by the HAZMAT Group Supervisor.
3.	Monitoring teams are briefed and then dispatched. Are their locations plotted on the Incident Commander's status board?
4.	Monitoring data and information are transmitted to the HAZMAT Group Supervisor.
5.	HAZMAT Group Supervisor evaluates and assesses the information and then sends it to the Incident Control Group and the Emergency Technical Support Center.
MET: _____ NOT MET: _____ NOT OBSERVED: _____	
JUSTIFICATION: _____ _____	
[Source: Exercise Porcupine; Performance Test at Los Alamos National Laboratory, 1994]	

Figure 3.5. Sample Evaluator Checklist.

- Exercise scope.
- Exercise objectives and evaluation criteria.
- Evaluation checklist(s) and materials.
- Scenario material.
- Site map(s).

Instructions For Evaluators. Evaluators are provided with general and specific instructions for supporting pre-exercise setup, exercise conduct, and exercise evaluation (see Figure 3.6). Information provided in evaluator instructions may include the following.

- Location and layout of the facility or function to be evaluated.
- Expected time of responder arrival.
- Logistical information.
- Communication contacts and equipment.
- Applicable plans and implementation procedures.
- Potential problem areas.
- Approved simulations.

Each evaluator should review and become familiar with the specific information provided in his/her package.

Exercise-Specific Training. Exercise-specific training is conducted prior to the exercise and assists in preparation of the evaluators to perform their functions. It may be combined with the controller training and includes a detailed briefing on exercise activities and the scenario. This training is the time for evaluators to ask questions and to ensure they completely understand their roles and responsibilities. Evaluator questions should be addressed and information clarified so that evaluators feel confident they can effectively perform their assignments.

3.3.2 Conduct of the Exercise

During the exercise, an evaluator's primary responsibility is to document observations of responder activities. This includes maintaining a chronology of events and using the checklists to ensure that accomplishment of key actions has been recorded.

Evaluators should report to their appropriate staging areas with any notes, evaluation criteria forms, evaluator identification, safety equipment (hard hats, safety glasses), and other evaluation materials. In addition, evaluators need to ensure communication arrangements are adequate and verify that any equipment they will be using is in working order.

SAMPLE EVALUATOR INSTRUCTIONS
EOC EVALUATOR _____<Name>

1. Participate in the evaluator briefing on May 10, 199X, at 11:00 a.m. in the <location>.
2. Report to the visitor center not later than 6:30 a.m. on the morning of the exercise for transportation to the EOC. Bring your evaluator package with you.
3. You will receive your lunch and “evaluator” arm band at the EOC.
4. Check in with the lead evaluator by telephone (X-1234) when you arrive at the EOC.
5. Coordinate with the EOC controller for conduct of the responder critique after the exercise.
6. Report to the <location> at 5:00 p.m. for the evaluator debriefing. Bring your evaluation sheets, checklists, and notes from the critiques. Dinner will be provided. The meeting will not go past 10:00 p.m.
7. Attend the DOE management debriefing at 8:00 a.m. the morning after the exercise. The debriefing will be conducted at the Federal Building, Room 123.

Figure 3.6. Sample Evaluator Instructions.

During the exercise, evaluators should address any questions or needs for clarification of information to the controllers. They should not interact with responders to preclude prompting of and/or interference with responder performance.

Realism versus Simulation. The value of an exercise is its ability to demonstrate response capabilities under simulated conditions. Even though responders know that the events are simulated and that an actual emergency is not occurring, realistic presentation of information can create an atmosphere that parallels that of a real emergency. The exercise should be planned so that events and required responses are as realistic as possible, thereby mimicking the sense of stress inherent in any actual emergency situation.

Whenever possible, every activity and response action should be carried out exactly as it would be if the events were real. Controllers should provide information to responders in a form and manner consistent with what would occur during an emergency and as a result of specific events or actions taken by the responders. Responders must earn information

(e.g., attempt to check instruments, perform meter readings, or take vital signs) **before** they are given that information. However, they should walk through, rather than actually perform, the response actions to restore or realign equipment using panel switches to avoid changing critical process or facility equipment alignments and parameters. The evaluators should evaluate the methods controllers use in the dissemination of scenario information and the way the responders act on this information.

Free Play. During an exercise, responders may interject mitigative actions that are not included in, but can be accommodated by, the scenario. In some cases, the scenario timeline will be modified to accommodate this free play. The controller team is responsible for controlling free play.

Evaluators should note any free play activities in the exercise and the actions taken by the responders. Free play may indicate a better understanding of emergency management and response activities by the responders than the exercise planners. Evaluators need to be aware of what is going on between controllers and responders during free play so they can document the actions.

Actual equipment and procedural problems during the conduct of an exercise interject a form of free play. Responders' solutions to actual equipment or procedural problems on a real-time basis during the exercise afford a valuable opportunity to evaluate the conduct and training of the responders. Controllers should allow responders to solve such problems unless safety is compromised or exercise limitations are exceeded.

During the exercise, the evaluators' primary duty is documenting responder performance. After the exercise, that data will be used to determine whether the exercise objectives were demonstrated.

Scenario Confidentiality. Scenario information should be closely guarded to ensure its confidentiality. If responders are aware of the scenario beforehand, it will skew any assessment of the emergency response capabilities. The following are some guidelines for evaluators.

- Evaluators should be careful of what they say and to whom because it may be overheard.
- Evaluators should be careful when positioning themselves to observe an activity to ensure they do not give away information by their actions.
- Evaluators should ensure that no one can see their scenario material or comments. They should never lay their scenarios, notes, or messages in a location where responders can read them.

Documenting the Exercise

Evaluators observe and document responder activities during the exercise. It is essential that evaluators keep accurate records and notes because these will form the basis for evaluation of performance.

The value of exercise evaluation is the ability to provide constructive feedback (positive or negative) to improve and enhance the effectiveness of an organizations's response to emergencies. Accurate and detailed documentation is critical to facilitate a full record of all the events in an exercise and in understanding responder actions.

Evaluators document the exercise by maintaining a chronology of important events, decisions, and actions in their area. Evaluators should document key activities and those which require a timely response for later evaluation. A list of these important events is included as part of the exercise package - in the timeline or MSEL. Highlighting or noting those events which occur in an evaluator's assigned locations is an effective way to track responder activity.

Evaluators should review their chronologies and notes immediately following termination to ensure an accurate reconstruction of events and activities for discussion at critique and evaluation sessions. Evaluation materials, as well as critique notes and forms, become part of the exercise documentation. Checklists and evaluation forms should be completed as thoroughly and accurately as possible.

Evaluation Basics. Experienced evaluators use the following techniques for effective observation and evaluation.

- Use checklists to confirm that exercise objectives are met.
- Take detailed notes concerning significant activities observed, including the time of occurrence.
- Divide responsibilities, when more than one evaluator is assigned a facility/area, to ensure detailed observation of responder activities.
- Stay in close proximity to responder decision-makers.
- Focus on critical activities (e.g., dose assessment decisions, protective action decisions, command and control issues, and other similar activities).

Although numerous events may occur simultaneously, evaluators do not need to record all of the action. Knowing which events are important eliminates superfluous information and

provides the kind of data most useful for exercise evaluation. Important events which evaluators should record include the following.

- Initiating scenario events (including when responders first detect abnormal conditions).
- Emergency facility activation and staffing completion.
- Actions of responders to the scenario.
- Key decisions made by managers and the time the decision was made.
- Deviations from plans and implementation procedures.
- Times when mitigating actions were completed.

Placement and Monitoring. Evaluators should be located so that they can observe responder actions and hear conversations without interfering with those activities. Certain conditions may warrant more than one evaluator being located in a setting or area.

What to Look For. Individuals preparing the exercise evaluation report will analyze the results provided by all evaluators to achieve an integrated evaluation of response capabilities. Their analysis will focus on the measures taken to mitigate the simulated emergency, the timing of key events, decisions made, and actions taken. Potential problem areas to watch for include the following.

- Lack of timeliness in mitigative actions.
- Ineffective communication among responders and organizations.
- Inadequate direction and coordination of field activities.
- Inability to monitor and assess scenario events.
- Ineffective command and control at the scene or response facility.
- Control problems that hinder conduct of the exercise.
- Responder deviations from plans and implementation procedures.
- Unclear plans or procedures that hinder responder efforts.
- Facility or equipment shortcomings that hinder responder efforts.

Evaluator Do's and Don'ts. Evaluators should know that scenario data and conditions cannot be changed without obtaining the permission of the Exercise Director or other designated persons. Evaluators should not interfere with a responder's action. Responders should be free to make their own decisions and should act on those decisions without interference. Listed below are reminder do's and don'ts for evaluators.

Do's:

- Be familiar with other controllers and evaluators.
- Remember that there may be two time frames, a scenario time and a real time. Scenario time may compress events so that several days are played in a few hours.
- Note any communications passed between time zones.
- Identify the participants by title and function.
- Be easily identifiable. Wear the prescribed identifier (e.g., arm band, shirt, or name tag).
- Position yourself to maximize your effectiveness.
- Locate the telephone or radio (for field teams) you will use and know how to use it.
- Be sure you understand the scenario. Know precisely what level of simulation is required and acceptable.
- Work with the other evaluators. Make sure they are reasonably aware of your actions and those of the responders.
- Make notes on responder's strengths and weaknesses related to the activities, as well as areas for improvement. Use critique sheets.
- Attend the post exercise critique session to provide your comments (if appropriate) and recommendations to the Exercise Director.
- Complete evaluation forms as soon as possible following termination of the exercise, while details are still clear in your mind. Identify your observations detailing areas of strengths, deficiencies, weaknesses, or improvement items.

Don'ts:

- Don't leave your post at key times.
- Don't ever prompt a responder!
- Don't get in the way.
- Don't answer questions from responders; refer them to the controller.

Termination of the Exercise. Upon notification from the Exercise Director or the senior controller, controllers will announce the termination of the exercise. Evaluators should note the time and circumstances associated with the termination.

3.3.3 Post-Exercise Activities

The primary post-exercise duties for evaluators are documentation of responder hotwash critiques immediately following the exercise, participation in the exercise organization critiques, and the exercise evaluation and report-writing processes. Evaluators will work with other members of the exercise organization during the evaluation process to “complete the picture” of responder actions and assess whether objectives were met, and what improvements or corrective actions are needed. These evaluation activities are covered in Section 3.4. Specific instructions, guidelines, and schedules for evaluators will be in their evaluator packages.

3.4 Joint Evaluation Activities

Controllers and evaluators participate in the exercise evaluation process but to different degrees. While the bulk of controller activity occurs during exercise conduct, evaluators perform the bulk of their functions after the exercise is finished. Both groups make significant contributions to the evaluation process.

3.4.1 Evaluation Input

In addition to evaluator observations and documentation, the following sources of information may be used to evaluate the exercise.

- Self-critique forms.
- Exercise critique comments.
- Exercise evaluation materials completed by controllers.
- Findings contained in the post-exercise reports submitted by participating agencies.

3.4.2 Critique of the Exercise

A series of formal critiques is conducted after the exercise to provide participants (responders, controllers, and evaluators) the opportunity to identify and discuss findings (both positive and negative).

Responder "Hotwash"/Critique. These critiques occur immediately after the exercise and are facilitated by the controller and evaluator team at each location. The purpose of these critiques is to provide a forum for constructive feedback on the exercise by the

responders. The identification of both positive and negative criticism provides a starting point for improving emergency response capabilities. This is a unique opportunity for responders to discuss their responses and their own perspectives on the activities and events. Controllers may discuss significant observations. Evaluators should remain silent and document the observations and feedback from the responders.

Evaluation Critique. This critique session generally occurs the day following the exercise and includes participation by all controllers and evaluators. This critique should provide the forum for discussion and correlation of individual observations, the formulation of exercise findings, determination of objectives demonstrated, and determination of overall exercise performance. Recommendations for corrective and improvement actions should be addressed.

Senior Management Critique. A senior management critique should be attended by key participants, including manager-level responders, the exercise director, the lead controller(s) and the lead evaluator(s). The overall exercise performance, significant observations, findings, and preliminary corrective and improvement actions should be addressed.

Responder Hotwash/Critique. Controllers manage this critique. Generally, the controllers facilitate the exercise critique while the evaluators take notes. It is important that the responders' input be included so an effective and complete evaluation is accomplished and the significance of responder actions is understood. It may be necessary to hold several critiques to include all of the participants.

The critique should be performed while exercise activities are still fresh in the minds of the responders, controllers, and evaluators. Responders may identify any weaknesses, shortfalls, or improvement items. They evaluate their plans, procedures, and task checklists for specific response organization positions, equipment and supplies, facility layout, and performance. For smaller exercises, the facility director (exercise responder) often conducts the critique, but it may also be under the direction of the facility lead controller. Controllers should answer questions on the timeline and scenario. This session can also be used to clarify and verify any information on which there were questions. Responders usually have a basic understanding and evaluation of their job performance during the exercise.

Controllers and evaluators should not provide the responders with details of any deficiencies or findings during this critique. Controller input should be limited to feedback concerning the actual event scenario, as opposed to the outcome of exercise.

Responders should be reminded that all controller/evaluator observations are preliminary and may be revised based on information from other evaluators.

If an evaluator or controller did not observe specific aspects of an organization's performance, the exercise responders may be asked to comment. Since it is critical that the evaluators not prompt or coach responders during the exercise, the evaluator should raise all questions of this nature through the controller after the exercise activities have been completed. These aspects should be indicated in the evaluation as being provided by responders.

A responder self-critique form can be used for documenting responder information about the exercise. These are normally passed out by the controller just before the critique. They should be collected after the critiques along with all attendance or participation rosters. Controllers should emphasize to responders that the self-critique forms provide the opportunity to candidly comment on emergency response activities and effectiveness of the exercise.

Evaluation Critique. Formal critique sessions are usually several hours in length and address, at a minimum, the following elements.

- Reconstruction and review of scenario events and shortcomings in the scenario or exercise conduct.
- A comparison of anticipated versus actual responder activities.
- An assessment of performance based on objectives, criteria, plans, and procedures.
- An assessment of the adequacy of plans and procedures.
- An assessment of the adequacy of facilities, equipment, and communications.

The first part of the critique is devoted to reconstruction of scenario events and response activities. Timelines should be reproduced for major evaluations, such as the troubleshooting and restoration of a needed piece of vital equipment. At this time, evaluators will organize and consolidate their documented observations. The controllers will provide input to the evaluators' documentation.

After this initial documentation is complete, the lead evaluator for the exercise will facilitate a review of the events (using the timeline) to document the interactions between response organizations. This is generally time-consuming, but it provides the information

required to check the communication process among all response organizations. This results in a consolidated exercise timeline of events that actually occurred.

After this process is completed, the individual evaluators should have sufficient information available for determining whether the responders demonstrated the exercise objectives. Although the evaluation is primarily concerned with the exercise objectives, collateral observations of events that were performed which require mention (positive and negative) are documented.

Each evaluator should develop a rationale for the evaluation from his/her respective point of view. This assists the evaluation report writer in assessing conflicting information that may occur from different sources. When the exercise demonstration is substantially at variance with what was expected, the evaluator should describe this in enough detail to provide a sense of what occurred.

The critique should end with a discussion of the preliminary results of responder performance for each exercise objective. Evaluator notes and materials should be collected at the conclusion of this session.

3.4.3 Exercise Report

An exercise report is prepared by the evaluator team to document evaluation of overall exercise performance. This report is the responsibility of the lead evaluator. Information from the formal evaluation and critique process provides the material necessary to generate the exercise report. Additional exercise reports may also be prepared by any external Departmental organizations that evaluated the exercise.

The exercise report covers the schedule, scenario, participants' activities, observations, and recommendations for corrective actions. The report considers the observations and evaluations made by the evaluators, controllers, responders (self-critiques), and other participating organizations. The exercise report may contain the following.

- A narrative summary with introductory and general statements noting exercise scope, purpose, objectives, participants, and an overall performance rating of the exercise.
- Detailed findings for each objective, including positive and negative comments regarding the effectiveness of emergency planning and preparedness elements.
- Recommendations for correcting negative findings.

Once the report has been drafted, the evaluators should review the report for accuracy. Evaluator findings will in turn be reviewed to ensure responders were measured against the evaluated organization's plans and procedures. Because perceptions differ, the report writers may find it necessary to adjust or “level” various findings to achieve standardization and consistency within the report. The leveling of any findings should be approved by the lead evaluator.